



Precision
Software

✓AMIGA

Superbase™

PERSONAL

RELATIONAL DATABASE SYSTEM

USER GUIDE

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REGISTRATION AND SUPPORT

Please complete and return the User Registration Card, which is included in your Superbase package.

Only registered users with a User Number are eligible for free software support.

If you do not return the card, we will not be able to assign you a User Number when you first call in, and you will not be able to obtain free software support.

Please remember, when requesting support, to make available:

- * Your User Number
- * The version number of your copy of Superbase
- * A clear statement of your problem

While we are proud of our ability to help users solve their problems, we ask you to remember that only a precise description of a problem can lead to a precise solution.

North American support is available from Progressive Peripherals and Software, 464 Kalamath, Denver, CO 80204. Telephone (303) 825 4144.

SETTING UP SUPERBASE

To get you up and running quickly, we've included this short summary of what you have to do when you set up a Superbase system.

You Need

- * An Amiga computer with at least 512K of RAM.
- * Some formatted disks.

A second disk drive is optional.

Make a Backup of the Program Disk

Use either the CLI "copy" command or the Workbench copying procedure to make a backup copy of the Superbase disk, or to install the program on a supported hard disk. Store the original in a safe place.

You have now made an authorized copy of Superbase. To run any copy, you must use the software protection device described below.

Using the Software Protection Device (Dongle)

Insert the dongle that comes with the Superbase package into the games port marked with a "2" on the right-hand side of the computer. The dongle must be present while Superbase is loading and throughout its operation.

Load Superbase

Insert the Superbase program disk, and double click on the disk icon when it appears on the Workbench. Double click on the program icon when the disk window opens.

When the start up screen with the copyright notice is displayed along with the "Please open a file" message, you have a choice:

- * Work in the same directory as the Superbase program

- * Change to another directory

If you don't mind that the Superbase program and its demonstration files use a large amount of disk space, you can continue as you are. Just open or set up a file from the Project Menu, and get to work.

Change Directory

Alternatively, you can switch to a directory on another disk. Place a formatted disk in the drive you wish to work with. You can remove the Superbase disk from the drive, or, if you have two drives, leave it there. The Superbase program (not the data) is completely memory resident and does not need to access the program disk during operation.

Select the Directory Change option from the System Menu. Type in the name of the drive you wish to work on (usually df0: or df1:), or the volume name of the disk (e.g. datadisk:). You can follow this with a directory pathname if you have already set up a directory structure using the CLI "mkdir" command (e.g. datadisk:myfiles/customers). Now you can set up a new file and start working with Superbase.

HOUSEKEEPING

Superbase does not include disk housekeeping functions. The most common functions are these:

- * Disk copy or Backup
- * File copy
- * File delete
- * File rename
- * Make directory

All are available from the Workbench or the CLI, and you should familiarize yourself with them.

You can run the CLI from the Workbench at the same time as Superbase. To use it, make the Superbase window smaller, click in the CLI window, and type in your commands.

HOW TO USE THIS GUIDE

Part I is Getting to Know Superbase, a light and easy introduction to the basics of Superbase. You should read this before reading any of the other sections.

Getting to Know Superbase provides you with the essential information you need to use Superbase effectively: opening files, viewing records, using the Control Panel, and searching the database. It's intended to give you lots of examples and practice, without being too much of a classroom lecture.

Part II is Working with Superbase. This is the main part of the User Guide, which explains in detail the various menu options and provides useful guidelines on how best to use each option and the system. Three tutorials give you the chance to consolidate your knowledge of setting up files, entering data, and using some of the important Process Menu options.

Part III is the Reference Guide. This is a *quick reference guide*. It's designed for experienced users who want a brief reminder of the function of each menu option, but it's also a very useful way for a new user to get an idea of the system as a whole.

There are six Appendices. Appendix A is a list of error messages and explanations.

Appendix B gives details and examples of how to use the important LIKE logical operator.

Appendix C provides a list of the functions available in the Superbase programming language, most of which may be used in Superbase Filter Command Lines and Formulas.

Appendix D provides you with a full list of the reserved words that constitute the Superbase programming language, and so may not be used as field names.

Appendix E lists ASCII codes and decimal equivalents.

Appendix F describes some of the major additional features available in the advanced version of the database, Superbase Professional.

Appendix G provides you with some useful tips on how to get the most from Superbase.

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PART I

Getting to Know Superbase

WELCOME TO SUPERBASE

This introductory session with Superbase will give you an understanding of how to perform some of the basic database management operations of the Superbase system. Some more complex functions are explained in the section Working with Superbase.

We'll assume you know how to do a number of things which are either essential to the Amiga operating system or common to almost all Amiga programs:

- * Switching on the power.
- * Loading Kickstart and then Workbench.
- * Using the mouse to point, click on icons or menu items, and drag icons or windows around the screen.
- * Resizing windows.
- * Using the front and back gadgets.
- * Using the close gadget.

If you don't know how to do any of these, refer to the Amiga User Guides, in particular Introduction to Amiga. You should also refer to the Amiga User Guides to find out how to perform disk housekeeping operations such as copying, renaming and deleting files from the CLI.

One other action we expect you to do before you get going with Superbase: set up your printer using the Preferences screens. Again, this is explained in the Amiga User Guides.

LOADING SUPERBASE

There are two ways to do this:

- * By selecting the Superbase disk icon and then the Superbase program icon from a window on the Workbench screen.
- * If you know how to use the CLI, you can run Superbase from it. However, it is inconvenient to run Superbase from the CLI if you only have one disk drive.

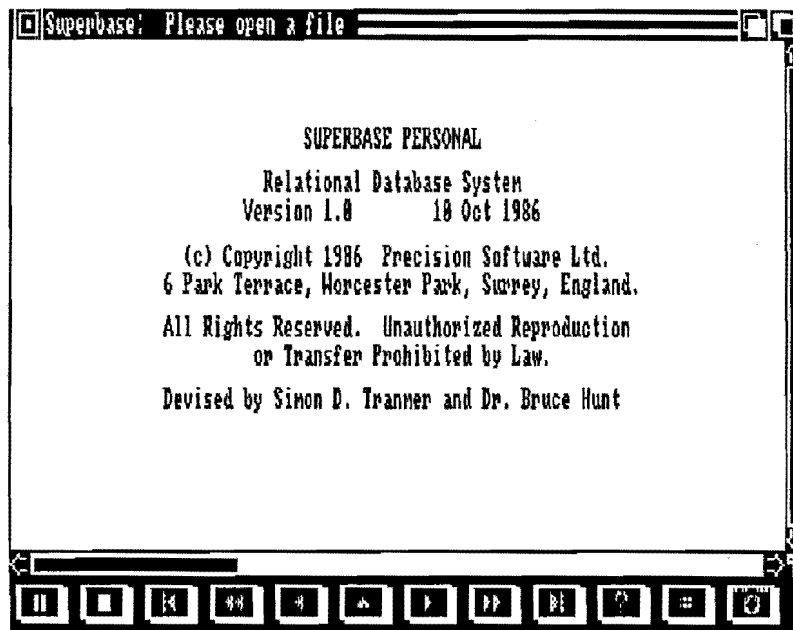
Superbase is not supplied with the Workbench on the program disk. Since Superbase may be freely copied, you can copy it to your Workbench disk if there is room.

Choose the way that's most appropriate for you. The first way: if the Superbase disk is already on the Workbench, open it as you would any other disk, and then double click on the Superbase program icon.

The second way: open a CLI window, type "stack 8000" and press Return, then type "superbase" and press Return.

Copyright Notice and Version Number

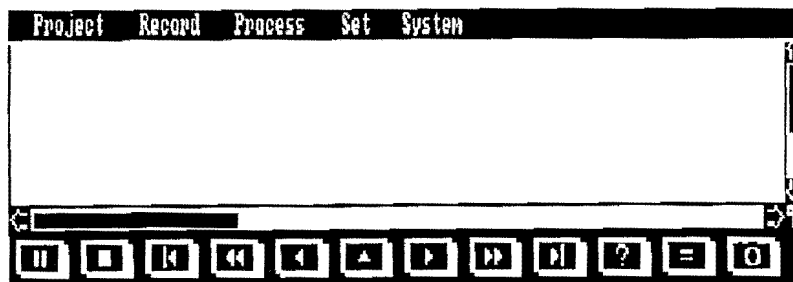
After a short while, Superbase displays its start up screen. This is a Copyright Notice which draws your attention to certain legal facts. It also includes the program Version number, which you should be ready to quote if you ever need to request telephone or written support.



You can look at this screen at any time by selecting Version from the System menu. But how do you select an item from a menu?

THE SUPERBASE MENUS

The Superbase menus are obtained in the same way as for all Amiga programs. Use the mouse, press the right-hand button and hold it down for a few seconds. Superbase displays its menu bar. This shows you the menu headings. As you'll see in a minute, each heading has its own set of items. Release the mouse button and the menu bar disappears.



Ghosted Items

A standard Intuition (that's the Amiga User Interface) feature is the "ghosting" of menu items that are temporarily unavailable. We use this feature in Superbase, most obviously during this start up phase when no file is open.

To see this, move the pointer to the menu bar, then press and hold down the right-hand button of the mouse. Now move the pointer across until it's on the word Record. You'll see that all the items on this menu appear to be faint, as if only half the dots that make up each letter were being used. If you try to select a ghosted item, nothing will happen. A quick look at the Control Panel at the bottom of the screen will reveal that most of the control buttons are also ghosted while no file is open.

OPENING A FILE

If you look at the top left-hand corner of the screen you will see a message that reads "Superbase: Please open a file". You always see this message when you start Superbase up, or when there is no file open. Since you can't do any work without a file, let's open one and take a look at it.

Files can only be opened from the Project menu. This is the first menu on the menu bar.

Press and hold down the right-hand button of the mouse, and move the pointer to the top of the screen, so that it highlights the word Project. As you do this the Project menu appears. The item you want is Open. Move the pointer down the menu, keeping the right-hand button pressed down, and highlight Open. As you do so you'll see four subitems appear to the right, three of which, Fields, Index, and Query, are ghosted. The only one available is File, which is the one you want to select. So, keeping Open highlighted, move the pointer slowly to the right until the File subitem is also highlighted. Now, let go of the mouse button, and the item is selected.

All menu items are selected in the same way, and we won't give detailed instructions for the dozens of menu selections discussed elsewhere in the manual.

Superbase Requesters

Superbase now requests the name of the file you wish to open.



Requesters like this one (some are more complicated) are used in most Superbase operations. They also communicate messages to the user. They are known as *requesters* because their function is to *request* specific action from the user. Usually the action involves making selections by clicking the mouse or typing in a number or a text value of some kind.

Many requesters show a panel that contains a list of items such as file names or field names. The panel may be only a few lines long, so there may be more files or fields than can be shown at one time. If there's a gap at the bottom of the scroll bar there are more items to be viewed. You can show them by dragging down the scroll bar at the right of the panel, or by clicking on the downwards pointing arrow gadget below the scroll bar.

One very important fact about requesters is that you must respond to them before you can do anything else. Most requesters have a Cancel button. Clicking on this returns you to whatever you were doing previously. If there's no Cancel button there is certain to be an OK button, and you can safely click on this once you've read the requester.

Many Superbase requesters include a Clear button. This has

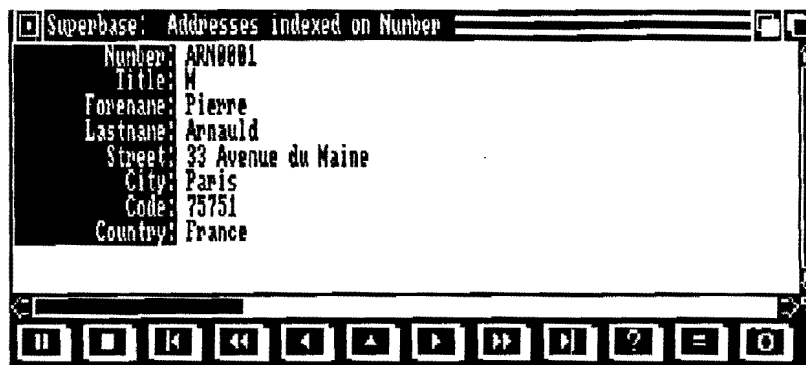
the effect of removing anything that's in the Selection Box, and can be used at any time.

Choosing the Addresses File

Move the pointer into the panel, which contains a list of file names. Move it over the file name Addresses. This is the demonstration file you'll be using for the rest of this session. Using the left-hand button, click once on the name Addresses. Superbase copies the name of the file you've selected into the Selection Box -- that's the box underneath the panel of file names. (If you see the wrong file name in the box, move the pointer carefully onto the right file name, and click again.) Once you've selected the file, move the pointer onto the OK button and click once. Superbase now opens the Addresses file.

THE MAIN DISPLAY

When Superbase opens a file from the start up screen, it automatically reads the first record in the file and shows it on the Main Display screen. You'll see the name of the file appear on the title bar at the top of the window, followed by the name of the field on which the file is currently indexed.



The Main Display is Superbase's permanent window onto your

database. It's like a large worksheet, 273 columns across; the number of lines you can see depends on the size of your window. Superbase uses the Main Display to show you the records in the current file, as well as the results of some other operations. At the bottom of the Main Display is the Control Panel, which we'll be looking at in a minute.

On the Main Display, the field names for each record in the Addresses file appear down the left-hand side of the screen. The data for each field is displayed to the right of its field name. If the data for a field is wider than the window, it extends off to the right. You can bring it into view using the scroll bar at the bottom of the window.

Remember that if there were more fields in the record than you could see, you could view them by dragging the scroll bar at the right of the window downwards, or by clicking on the downward pointing arrow.

Record View, Form View and Table View

The record format you're looking at now is only one of the three possible ways of looking at your file. It's called Record View. This view shows the records one at a time, restricting the format by keeping the field names on the left and limiting you to one field per line. This restriction allows records to be scrolled up and down the screen with the Control Panel buttons.

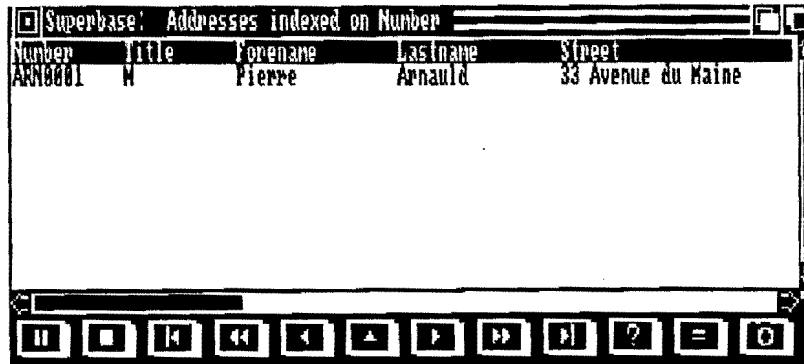
In Form View, you also see one record at a time. Each record is like a form or page and, as you'll see later, you can drag the fields around to create a worksheet designed to suit your application.

The third display format is Table View. This displays the field names across the top of the screen with the data appearing in rows and columns, each record occupying one line.

Switching to Table View

Select Table View from the Set Menu. You will see the field names appear across the top of the screen. The same record is shown, but each item of data appears underneath

its field name. As with Form View, there are ways of changing this row and column display to suit your own preferences, which we'll explain later.



Scrolling the Screen

While you are viewing your record in Table View you will notice that the field names do not all fit onto the screen. The fields to the right can be viewed using the arrow at the right of the bottom scroll bar. Move the pointer onto this arrow, and click on it once. The display shifts five columns to the left. Click once on the left-hand arrow to shift right and restore the display. If you want to shift the display by larger areas, drag the bottom scroll bar with the mouse.

CONTROL PANEL

Now that you've opened a file, and discovered how to change the way in which records are displayed on the screen, let's look at the Control Panel. This is your means of controlling the main display. As you can see there are 12 buttons, most of them modelled on the controls for a video cassette or tape recorder, so you should find these conventions easy to learn and remember.



Each button has a special purpose, and together they fall into three groups. On the left are the Pause and Stop buttons, followed by seven buttons for browsing through the file. On the right are three special purpose buttons which we'll examine later. The functions of some controls are more intuitively obvious than others, so we'll take a look at the first nine now, one by one. Make sure you've set Table View for this exercise.



Current Record. After some actions the screen does not show any record data. Click on this button to redisplay the current record. You can also use this button to restart Table View with the current record at the top.



Next Record. Allows you to view the next record in the file. The order in which the records appear is decided by the current index, which is shown by the message on the title bar of the main display window. Try this now, and you'll see the data for the next record come onto the screen. In Table View it appears underneath the previous record. In Form View it replaces the previous record.



Previous Record. This gets the previous record in the file, relative to the current record.



Fast Forward. Instead of moving forwards through the file one record at a time by pressing the Next button, you can move much quicker using the Fast Forward button. Click on this button, and Superbase gets the next records in the file, displaying them row by row until the screen is full, when it selects the Pause button.



Pause. When the Pause button is selected, you can only select options from the menus if the system is inactive. You can, however, use the other Control Panel buttons. So, to view the next screen of records, release the pause by clicking on the Pause button. Superbase continues with the Fast Forward display of records, stopping when the next screen is full, or when it reaches the end of the file. Pause is useful when you're searching for a record and you want to stop from time to time to read the screen.



Rewind. This does the opposite of the Fast Forward button. You will see the data appear from the top of the screen, in reverse index order. If you do this immediately after Fast Forward there will be an apparent delay while Superbase displays records over the text of the existing display.



First. Pressing this button automatically displays the first record in the file, according to current index order.



Last. Pressing this button automatically displays the last record in the file, according to current index order.

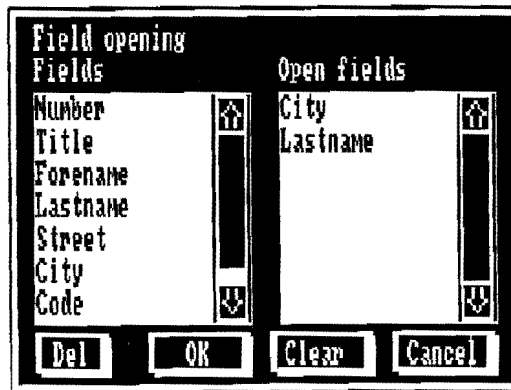


Stop. If you want to stop the Fast Forward or Rewind display, click on Stop. You must also click on Stop if you want to interrupt Pause when it's selected.

OPENING FIELDS TO VIEW

As Superbase imposes no limit on the number of fields per record, you need to have a way of restricting the fields that actually appear on the Main Display. You can do this with the Open Fields option on the Project Menu.

Display the Project Menu, and select Open Fields.



The basic procedure for selecting fields is very simple:

1. Click on a field name in the left-hand panel. Superbase copies it into the right-hand panel.
2. Repeat until the selection of fields you want is in the right-hand panel.
3. Click on OK.

The list of fields in the right-hand panel is called the Open Fields List. Let's make one now. Move the pointer onto the list of field names, and click on City. Notice how Superbase copies it across. Now click on Lastname.

When you have both names in the list, click on OK. (If you make a mistake, DEL removes the current field from the right-hand panel; Clear removes the whole list.)

Superbase immediately returns to the Main Display showing the data for the two open fields. Try out the Control Panel buttons to see their effect. Experiment with Record View as well as Table View.

When you've finished, restore the full set of fields by selecting Close Fields from the Project menu.

PAGING

This is another feature which gives you control over the Main Display: the Paging option.

If Record View is not set, select it now from the Set menu. Then go back to the Set menu, and move the pointer down to the Paging item, which should have a check mark against it. Release the mouse button while Paging is highlighted. You've now turned the Paging option off. (You can check this by looking at the Set menu again; there should be no check mark against the Paging item.)

Now, select the first record in the file by clicking on the First Record button. Then click on Fast Forward, and watch the display. You'll see that Superbase doesn't pause when the screen is full -- it just goes on displaying records. You can still use Pause to halt the display, but the automatic pausing at the end of each "page" of data no longer occurs. The same applies when Rewind is in use, except that the records appear at the top of the screen.

If you now switch back to Table View and try out some of the Control Panel buttons, you'll see that with Paging off the difference is similar to that in Record View. Each record appears below the last, without clearing the screen. Rewind displays records from the top down, as in Record View.

MOVING COLUMNS

For this exercise, you need to be able to see all the fields on the screen, not just those in the Open Fields List, so if you have an Open Fields List in use, close it now by selecting Close Fields from the Project Menu.

You can see that if you have all the fields open in Table View, some of the field data is very likely to be hidden from view. Normally, to see hidden fields you have to scroll the screen to the right. However, Superbase provides a way of closing up columns to get more data on the screen.

Assuming you're in Table View -- set it if you're not -- click on the First button, then the First Record button on the Control Panel in order to get the first record of the Addresses file on your screen.

Moving a Column to the Left

Now move the pointer so that it is on the space to the right of "M" in the Title field. Once you've done that press and hold down the left-hand button of the mouse. As you do this you will see two vertical lines appear, forming a column beneath the Title field. There are also lines extending off to the right of the screen.

Keeping the left button depressed, drag the pointer a little to the left, then release the mouse. You will see that the column and the field name moves, and when you release the mouse the data beneath the field name has shifted to the left. All columns to the right have also moved leftwards.

Now try the same with the Forename field. This time move the column so that it is just to the right of the "e" in Title. If you also try this with Lastname and Street you will see that as you move the columns over to the left, the field name City appears on the right of the screen.

If you now move the City column to the left, the Code field will appear on the screen. Finally, if you move the Code field, Country will appear on the right-hand side. So by moving the columns you've got all the fields on one screen instead of two.

Notice that you can move a column so that it overlaps the column to its left, truncating the data. This can be useful.

Moving a Column to the Right

If you move a column back to the right, the truncated field name and data are not automatically restored to their full length. A quick way of restoring the length of a field is to double click in its column. Then if you click on the Current Record button the full field name and data will reappear. But as this only displays one record you will have to use Fast Forward if you want to redisplay a screen of record data.

FORM VIEW DESIGN

Superbase allows you to rearrange the positions of the fields in Form View, setting more than one field on a line, creating columns of fields to resemble invoices or other business forms, and generally tailoring the system to suit your own application. The full 273 column worksheet is available for Form View, and you can vary the depth by dragging fields downwards, creating new lines.

You can use Form View for creating new records and editing them, as well as for display. By setting the Printer option on, you can copy the visible portion of the worksheet to the printer.

Select Form View now from the Set Menu.

Make sure you've got the Addresses file open, and that the current record is the first record in the file.

Default Form View

If you look at the screen you can see that the fields names already appear in a Form View. This is the default Form, which we have predefined for this demonstration file. You can change it, and then save it with Project Save File. Once a Form has been saved, the fields will appear in that layout every time you open the file.

Moving Fields

Let's move the Lastname field to another position on the screen.

Move the pointer so that it's on the field name Lastname. Then press and hold down the left-hand button of the mouse. Superbase outlines the field name and its data area. (If you see a cursor instead, you've started editing by mistake. Carefully click again on the field name itself.) Now drag the outlined box to a new position two lines above its present position. Release the mouse button. As you can see, the field name and data have moved to this new position.

Now, if you want to, you can arrange the Form View for Addresses in any way you like. This can be just an experiment, but if you want to save the present arrangement, you can do so. Select Save File from the Project Menu. Superbase stores the File Definition, which contains the Form View location of each field, on disk.

Although you have freedom to drag fields to any position on the screen, there are as usual a few limits to what you can do.

- * You cannot place a field on top of either the name or the data area of another field. If you try this, Superbase leaves the field you tried to drag in its original position.
- * Superbase won't let you move a field completely off the right or left-hand end of the worksheet.
- * To gain more lines, move a field down into the Control Panel. Then use the vertical scroll bar on the Main Display window to bring it back into view. Move it down again if you still need more lines.
- * To move a field over to the right of the worksheet, position it near the right-hand edge of the screen, then shift the display with the scroll bar, and drag the field further over.
- * Only the open fields are shown, so close the Open Fields List if you want to see all the fields in Form View.

Finally, a small but entertaining feature. Select Fast Forward, and drag the fields around as described above. No problem!

SUMMARY

Time for a check list of what you should know before we proceed.

- * How to Open a file
- * How to switch between Form View, Table View, and Record View
- * How to switch Paging off and on
- * How to drag columns around in Table View
- * How to drag fields around in Form View
- * How to Open and Close a list of fields
- * How to select the Current record
- * How to move to the First record
- * How to go to the Last record
- * How to move to the Next record
- * How to go to the Previous record
- * How to use Fast Forward to move forwards through the records
- * How to Rewind to move backwards through the file
- * How to Pause
- * How to Stop

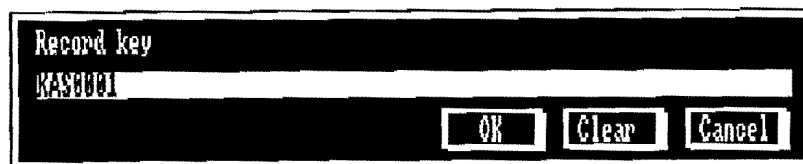
Understanding all these actions is essential if you want to be able to work easily with Superbase. If you do not understand them or are uncertain then take a little time to go back and re-read the appropriate sections before continuing.

THE KEY LOOKUP BUTTON



Key Lookup. This is for the retrieval of individual records. You enter a value for the field on which the file is currently indexed, and Superbase uses the index to find and display the record. You can only use one index field at a time -- the Filter button is used for multiple value searching.

When you click on the Key Lookup button you'll see a requester for the entry of a key value.



Typing In Your Key

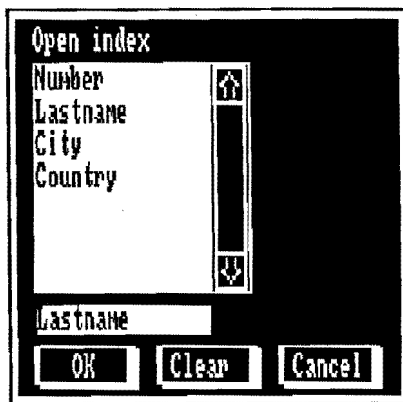
To be able to type in the box, you must move the pointer into it and click the mouse once. This produces the cursor, and you can then type in your index key, which can be up to a maximum of 100 characters. Suppose you want to find the record for Julie Kasper. The file is indexed on the Number field, so we can use the current index to search for individuals by their Reference Numbers. Click in the box and then type in "KAS0001" (omit the quotation marks). This is the index key.

Retrieving the Record

When you press Return or click on OK, Superbase looks up the first record for which the Number field has the value "KAS0001". If there were more than one with this value, you would have to browse through the file with the Next Record or Fast Forward button to find the exact record you wanted.

Key Lookup with a Different Index

You're not restricted to one index. Superbase allows you to have up to 999 indexes for each file, all automatically updated when you add or modify records. We've provided indexes on other fields besides the Number field: Lastname, City and Country. Let's try one of these. Select Open Index from the Project Menu.



Click on the field name Lastname; this is copied into the Selection Box. When you're ready, click on OK. You've selected the Lastname Index, and if you look at the title bar at the top of the window you'll see that the message now reads "Superbase: Addresses Indexed on Lastname".

The record on the main display has not changed. Click on the Key Lookup button, and Superbase produces the Record Key requester. As you did above, click in the box and type in a key value, only this time type in "Forge". Press Return or click on OK, and Superbase looks up the first record with Forge in the Lastname field.

Entering Partial Values

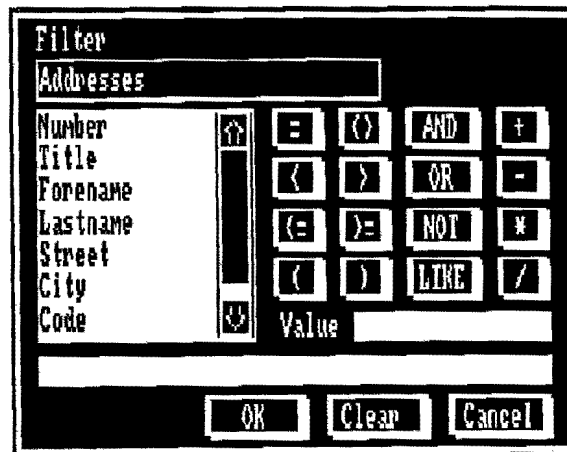
You don't even need to type the full index key in many cases. Try Key Lookup once more, but type in "Hut" and press Return. Superbase finds the first record for Huttermann. For your information, Superbase tells you that it didn't find the exact match.

THE FILTER BUTTON

Filter. This is a very powerful feature. You may have thousands of records in a database file, yet you may often want to review them (or print them out) on a selective basis. The Filter allows you to enter a set of values, as simple or as comprehensive as you like, to restrict the display to only the records that match those values.

The Filter Requester

Move the pointer and click on the Filter button on the Control Panel.



This requester looks more complex than the ones you have seen so far, but after a little practice with the demonstration file you'll find that you can remember how to use it easily. It's important that you learn how to use the Filter, because Superbase uses filters in several other functions.

The requester has four main parts: the Field Name Panel, the Operators, the Value Box, and the Main Box. A Filter is created by a combination of clicking on field names and operators, and typing in values. These actions produce the Filter Command Line in the Main Box. Let's look at each component of the Filter requester in turn.

Field Name Panel

This appears on the left-hand side of the requester. You can scroll the list of field names up and down in the usual way, using the scroll bar and arrows at the right of the Field Name Panel. You specify that a field is to be used in the Filter by clicking on its name in this panel.

The list of field names is complete. It's not affected by whether you have an Open Fields List, so the fields that specify the Filter need not be the same as the ones that are shown in the Main Display.

Operators

These appear to the right of the Field Name Panel, and can be divided into the Relational Operators, Logical Operators and the Mathematical Operators. We'll see how these are used below.

Value Box

This is the box with the word "Value" next to it. You use it for typing in values such as names, numbers, and dates, which will form part of the Filter. When you are matching numeric data that has to be held in a text field because it may include non-numeric characters (such as telephone numbers), you must put the value inside quotes.

Always remember to press Return after typing in the Value Box. You must do this to ensure that the contents are copied to the Main Box.

Main Box

This is the long box that appears below the Field Name Panel and extends across the whole requester. When you make selections with the mouse or type values into the Value Box, Superbase copies them into the Main Box, building up the Filter Command Line. In this way you get

Immediate feedback about the results of your selections. The maximum length of the Filter Command Line is much greater than the apparent length of the box -- up to 255 characters are allowed. You can type directly into the Main Box, but in these exercises we'll stick to making selections with the mouse.

Using the Operators

The Operators are the most complex aspect of the requester. They are used to relate field names to other fields or values. For example, if we wanted to set up a Filter to show only the addresses in West Germany, we would need the expression: Country LIKE "West Germany". Here, Country is a field name obtained by clicking in the Field Name Panel; LIKE is selected by clicking on the LIKE Operator button; and "West Germany" is typed into the Value Box.

Text String and Pattern Matching: LIKE

When you're searching for names or text strings, you should avoid using the equals sign operator, and use LIKE instead. This is because only LIKE accepts matches on either upper or lower case characters; it's said to be "case insensitive". The equals sign operator, on the other hand, requires exact matches for what you type in: it is "case sensitive".

LIKE also permits searches for text strings that include pattern matching characters. These allow you to enter incomplete words for the Filter. For example, to find all the records where the Lastname begins with "C", you need the Filter Command Line: Lastname LIKE "C*". To specify a range, add square brackets to the value: Lastname LIKE "[A-D]*"; this finds all records where the Lastname begins with "A", "B", "C", or "D". Note that the asterisk is placed outside the brackets.

There are several other things you can do with the LIKE operator. You'll find a complete list and a number of examples in Appendix B.

The Relational Operators

- = This specifies that the field is to be EXACTLY EQUAL TO the following value or field: Balance = 2000
- <> The field is to be NOT EQUAL TO the following value or field: Country <> "France"
- > The field is to be GREATER THAN the following value or field: Balance > 1000
- < The field is to be LESS THAN the following value or field: Balance < 1000
- >= The field is to be GREATER THAN OR EQUAL TO the following value or field: Balance >= 1000
- <= The field is to be LESS THAN OR EQUAL TO the following value or field: Balance <= 1000

The Logical Operators AND, OR and NOT

These provide links between different expressions like the ones given above. You use them to specify alternatives and ranges for the Filter, either for a single field or for a number of interrelated fields:

- AND Both of the conditions linked by AND must be satisfied for the record to be accepted by the Filter: Country LIKE "West Germany" AND Balance >= 5000
- OR Either of the conditions linked by OR is sufficient to make the record acceptable to the Filter: Country LIKE "West Germany" OR City LIKE "Geneva"
- NOT NOT is slightly different. It negates the effect of an expression: NOT (Country LIKE "West Germany" AND Balance > 5000); this will find all the records other than the ones where the country is West Germany and the balance is greater than 5000. Note the use made of parentheses with NOT.

Parentheses

The (and) operators are used in the normal way, to give priority to one part of the expression over another.

(The following expression has a higher priority for evaluation than the preceding expression.

) Required to end a higher priority expression.

The numbers of opening and closing parentheses must be equal.

The Mathematical Operators

+ This is used to express addition: Balance > Amount
 + 1000

- The minus sign expresses subtraction: Balance >
 Amount - 1000

* The asterisk is used for multiplication: Balance >
 Amount * 1.15

/ The slash represents division: Balance < Limit /
 10

Typing In the Main Box

The great power and flexibility of the Filter system is only achieved by giving the user control of every aspect of the operation. Because you can type into the Main Box you can include all kinds of expressions which are not available from the buttons on the requester itself, and all kinds of text and numeric values.

The price you pay for this flexibility is an increased risk of making mistakes. This is not too serious, as you cannot harm your data by using a Filter (although you can discard records using the Remove Records Filter). However, you may see a Superbase "Can't do this" message concerning an error in the Filter Command Line in two possible situations:

* When you click on OK after creating or editing a Filter Command Line.

- * When you use a Filter after changing the definition of a field with Project Edit.

If you see a "Can't do this" message you must either change the Filter Command Line or change the file definition. Here's a summary of the editing facilities available when typing inside the Main Box:

Filter Command Line Editing

- * You can remove everything from the Main Box by clicking on the Clear button.
- * If you have clicked in the box, hold down the right-hand Amiga key (next to the space bar) and press X to delete its contents. (Note: we refer to this key combination as Amiga-X.)
- * Provided you have not left the box -- the cursor is still visible -- Amiga-Q will restore the contents you deleted with Amiga-X. *This does not work after clicking on Clear.*
- * If Superbase won't let you make an Operator selection when you return to modify an existing Filter Command Line, click in the Main Box and press Return. Now you can go ahead.
- * Shift key and cursor right arrow and shift key and cursor left arrow move the cursor to the end and beginning of the Filter Command Line respectively.
- * The Del key removes the character under the cursor. By holding this key down you can cause text to the right of the cursor to be deleted.
- * The Backspace key removes the character to the left of the cursor. Backspace repeats its action if held down.

Using a Filter

The Filter Command Line is made active by clicking on OK. Whenever a Filter is in use, Superbase highlights the Filter button on the Control Panel. You can perform all but one of the Control Panel record selection operations we've discussed, and Superbase will restrict the records displayed to the ones that match the Filter values. For example, if you have specified Country LIKE "West Germany" and you click on the First Record button, Superbase will go and find the first record in the file, according to the current index, which has the value "West Germany" in the Country field.

The Key Lookup button is an exception to the Filter

effect. You can still recall individual records by entering an Index key value, whether or not they match the Filter.

Suspending a Filter

There will be times when you want to remove the Filter effect so that you can review all the records in the file again. To do this, just click on the highlighted Filter button. It reverts to normal, and you'll find that when you use the Control Panel Superbase acts as if there were no Filter.

Modifying or Re-activating a Filter

If you've set up a Filter and then suspended it, you can bring it back into operation by clicking once more on the Filter button. Superbase displays the Filter requester, with the Filter Command Line in the Main Box just as you left it.

If you want to, you can add to the Filter Command Line by clicking on more field names and operators (you may need to click in the Main Box and press Return first), or edit it after clicking in the Main Box, as described above.

Whether you've made any changes or not, just click on OK to use the Filter again.

FIFTEEN MINUTE TUTORIAL

Make sure you've got the Addresses file open, Indexed on Lastname. Set Table View with Paging off. Go into Project Open Fields and open these fields:

Forename
Lastname
Street
City
Country

In Table View, drag the Lastname column a few columns to the left, and then do the same for City, overlapping the Street column if necessary, until the Country column comes

Into view.

Click on the Filter button.

We are going to search for those name and address records where the person lives in the USA or West Germany. So we'll use the Country field, the LIKE operator, and the Value Box. You'll see the results of your selections appear as a Filter Command Line in the Main Box.

Move the pointer into the Field Names Panel, and click once on the down arrow to bring Country into view. Then click on Country. The name appears in the Main Box. Next, move the pointer to the right and click on the LIKE button. This also appears in the Main Box. Now you must type in "USA". This goes in the Value Box. Move the pointer into the Value Box and click on the mouse to produce the cursor. Type in "USA" (no quotation marks). Press Return -- this is essential, or the contents of the Value Box will not be copied into the Main Box. Your Filter Command Line should read:

Country LIKE "USA"

Next, you need the OR operator. Click on it and Superbase copies it into the Main Box. Now you must click on the Country field name again. This is important. A Filter Command Line like this is not allowed:

Country LIKE "USA" OR "West Germany"

So, click on Country, as before, followed by LIKE. Then, as before, click in the Value Box, and type in "West Germany". Press Return. Your Filter Command Line should look like the one shown in the diagram.

Filter

Addresses

Title	☐ ☐ ☐ ☐ ☐ ☐	=	()	AND	+
Forename		<	>	OR	-
Lastname		<=	>=	NOT	*
Street		(	)	LIKE	/
City		Value			
Code					
Country		Country LIKE "USA" OR Country LIKE "West Ger			

OK Clear Cancel

If there are any mistakes click on Clear and repeat the steps above until you get it right.

You have built your Filter Command Line, so now you can put it into action. Click on the OK button. Superbase activates your Filter and displays the first record in the file that matches the Filter. Click on Fast Forward. Superbase shows all the records that match the Filter.

Now de-activate the Filter. Click on the Filter button so that it's not highlighted. Now click on Rewind. You'll see all the records in the file appear as normal.

Let's go back and add another condition. Click on the Filter button to recall the requester. Click on the OR operator, then on Country, then on LIKE, then in the Value Box. Type in "France", and press Return. Your line should read:

Country LIKE "USA" OR Country LIKE "West Germany" OR
Country LIKE "France"

Now click on OK, and when Superbase shows the first record, click on Fast Forward. You'll see that Superbase has added the addresses in France to the display.

That concludes our short tutorial.

OTHER FILTER BASED OPTIONS

You should have acquired a feel for the way the Filter requester works, and you can experiment freely with the Addresses file to deepen your knowledge. When you're ready, you can start using the Process options, all of which are selected from the Process menu.

Remove Allows you to delete groups of records from the file. You can use the Control Panel Filter to view them first -- the Filter Command Line is preserved for you to use in the other Filter functions.

Import When you need to read in records from other systems, the Import Filter provides a means of rejecting records that don't match the conditions you set up.

Export The opposite of Import, Export lets you create a disk file containing selected fields and records.

Print A quick and easy way of obtaining a printout of selected records.

Labels Up to four columns of labels from the records that match the Filter.

The Update and Query options use slightly modified Filter requesters, but the principle is the same. More details of all these options can be found in the section Using the Process Menu, in the next part of the Guide.

THE EXTERNAL FILE BUTTON

External File. The right-hand button on the Control Panel is a representation of a camera. It activates another of Superbase's unique features -- the ability to access and display external files, especially the graphic images produced by the leading graphics packages for the Amiga.

To be able to use this feature you must first open a file that has an external file field as part of its definition. We've provided one on your disk, called Pictures.

Open the Pictures file now. Superbase reads the file definition and displays the first record. You'll see that one of the fields is called Picture 1, and opposite it is the pathname of a picture called "Copperstate".

Now, click on the External File button. Superbase switches to the External File Screen and displays the "Copperstate" image, placing the name of the picture on the title bar at the top.

Return to Superbase by selecting the Close item from the Control menu on the Picture menu bar, in the normal way. This is the way to switch off the External File button. If you can't obtain a menu bar in the External File Screen, click the left mouse button once to activate the window, then try again with the right button.

This gives you a foretaste of the External File system. You can combine it with the Query and Filter functions of the database to produce a unique "picture library" application, indexing and cross-referencing large numbers of independent image files by putting keyword data into ordinary fields and using them as the basis for searching.

We suggest you experiment with the Filter function and the demonstration Pictures file, and read through the External File Management section in the next part of the Guide before setting up your own External File Database.

PART II

Working with Superbase

USING THE PROJECT MENU

The Project Menu contains the options for setting up, opening, editing, and removing database files and indexes. In this section we cover in detail all the aspects of the options. There's a tutorial on page 11-22 which takes you through the process of setting up a file, but we advise you to read through the detailed discussions before attempting it.

NEW FILE: OVERVIEW

A Superbase database file has three components: a data file, an index file, and a definition file, usually referred to as the file definition. (There can be up to 999 index files for each data file, but the minimum is one.) The data file holds the actual record data that you key in through the Record menu options. It has a name, and a ".sbf" extension, like this: "addresses.sbf".

The index file holds single entries that match the contents of one of the fields in the data file. The index allows fast look-up of individual records (like a book index), and also provides an alphabetical order for the presentation of the records. Index files have a numeric extension to the main file name, like this: "addresses.1". This would indicate that the index was constructed on the first field in the file definition (more explanation later).

The file definition contains all the information Superbase needs to display and update the records for the file correctly. Its extension is ".sbd", and its full name could be like this: "addresses.sbd".

The fields that comprise the file definition may be of three main types: text, numeric and date. There is also an external file field type, which contains the names of text or graphics files, and is used by Superbase's External File System to provide indexed "picture library" facilities. Any field may have a validation or a calculation formula attached to it, or be designated a required field -- one for which some data is compulsory. An index may be constructed on any type of field.

There is no limit to the number of fields in a file

definition.

Here's a preview of the steps required to set up a new file:

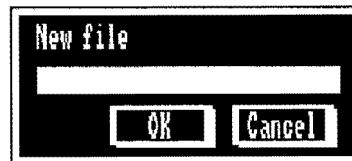
1. Select Project New File and type in a new file name, adding passwords if desired.
2. Define the characteristics of each field and add it to the File Definition.
3. Specify which fields are to be indexed.
4. Save the File Definition.
5. Start entering record data.

SETTING UP A NEW FILE

From the Project menu select New, and from the New submenu select File.

Entering the New File Name

Superbase presents you with a requester for the name of the file you are about to define.



Click in the box, then type the name of the new file. Don't type ".sbf" or any other extension. The maximum file name length is 26 characters. Any characters may be used except the following:

/ : ;

If you want to add a password, do so (see below). When you're ready to move on, click on OK or press Return to call up the main File Definition requester.

Passwords

If you want to attach a password to your file, end the filename with a semicolon and then type in the password. You can have up to three passwords, separated by semicolons. Each one permits a different level of access privileges for the file. Suppose your three were John, Paul and George. If you enter the password George, you will have read privilege only: no data entry or editing, and you may not delete the file. If you enter Paul, you get read and write privileges, but you may not delete the file. Only if you enter John do you have full privileges for the file.

If you enter two passwords to begin with, the read only level of privilege will not be available; one password, and both read only and read/write levels will be unavailable, so the single password will allow all actions.

When a password exists, Superbase does not display it when listing the files on the system, but you will have to add it each time you wish to open the file. When you are adding the password to open the file it is visible to anyone looking at the screen, so you should take the appropriate precautions.

Caution: you cannot change a password once it has been set, so don't lose it.

THE FILE DEFINITION REQUESTER

This is the screen on which you specify the details of each field in the file. The requester has several parts.

The screenshot shows a window titled "File definition" with three columns: "Field name", "Attributes", and "Format". The main area is a large empty box with a vertical scrollbar on the right. Below this box are several radio buttons for field types: "Text", "Date", "Validated", "Numeric", "External", "Calculation", and "Required". A "Field" label is followed by a text input box. At the bottom are five buttons: "Add", "Del", "OK", "Clear", and "Cancel".

At the top there's the File Definition Panel. This has three parts or zones, indicated by the headings Field name, Attributes and Format. When you're looking at an existing file definition, the list of fields for the new file appears in the left-hand zone, the abbreviated forms of the field attributes (TXT -- text; NUM -- numeric; and so on) in the centre zone, and the field formats (length, date style, or number style) in the right-hand zone. For a new file the File Definition Panel will be empty.

Below the panel are the field type selection buttons. You use these to change or set the attributes of the selected field. The selected field is the one whose name appears in the Field box below the Numeric field type button -- when you've just called up this requester this box is empty.

Bottom left are the ADD and DEL buttons. When you've defined the details of a new field, you click on ADD, and Superbase adds the field name together with its attributes and format to the upper panel. DEL is generally used when

editing an existing file definition. For a more detailed explanation of these buttons, see pages 11-18 and 19.

Bottom right are the usual OK, Clear and Cancel buttons. Cancel exits from the requester to the main display. Clear empties the Field box and resets the field type selection buttons. OK takes you on to the next step, which for a new file is specifying the Index fields.

So, to summarize the procedure for defining new fields:

1. Type in a field name.
2. Select the appropriate field type button.
3. Enter details about the field -- its length or numeric format, for example.
4. Use the ADD button to add the field to the file definition.

CREATING A NEW FIELD

Click in the Field box below the Numeric field type button. Type in the field name. You may use up to 15 characters, including spaces. Use only alphanumeric characters, the space, and the underline character. The field name may not begin with a number.

You can use any words except those reserved for the Superbase programming language. A list of these appears in Appendix D.

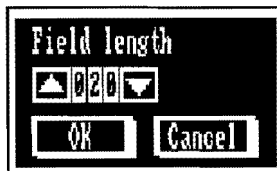
Selecting the Field Type

Click on the button next to the type of field you want. Choose from Text, Numeric, Date, or External to begin with. You can add Validation, Calculation, or Required status later. Your choice will display another requester, for entry of details about the field. When you've specified the details, you click on OK to return to the File Definition requester. Then you add the field to the File Definition Panel by clicking on the ADD button (see page 11-18).

We shall now review these specific field type requesters.

TEXT FIELD

Use this type for any field that is not designed to hold a date, a number or the name of an external file.

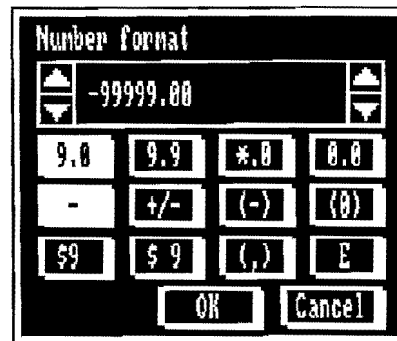


The requester allows you to set the length of the field, up to a maximum of 255 characters. The up and down arrows at either end of the length counter are for increasing and decreasing the value of the counter. The up arrow increases the value, the down arrow decreases it. Each time you click on one of the arrows the value in the counter changes. Normally it changes by one, but if you first click on the middle or left-hand digit in the counter you can alter the length by tens or hundreds. Click on the right-hand digit to go back to units of one.

When you've set the field length as you want it, click on OK to accept the entry.

NUMERIC FIELD

This field type is suitable for ordinary decimal numbers, currency amounts, integers, and exponential formats. There is a maximum of 13 digits, which you may arrange in any format around the decimal point. There are many numeric styles and features to choose from.



The numeric field requester has an upper panel that reflects the current number format. As you make selections from the buttons below, or click on the up or down arrows to left and right of the upper panel, the number format changes. You do not edit the number format directly.

When it first appears, the number format is set to -99999.00. This allows up to five digits to the left of the decimal point, and two decimal places. There is also a space for a minus sign for negative numbers.

Changing the Numeric Format Length

Click on the arrows at either side of the number format panel. The left-hand arrows increase and decrease the digits to the left of the decimal point, the right-hand arrows increase and decrease the decimal places. Remember you may have a maximum of 13 digits in the format as a whole.

Selecting Numeric Format Type

You can choose from four possible types of basic numeric format; the selection is always reflected in the number format panel:

- 9.0 This format is preselected when the requester appears. The format shows actual numbers left of the decimal point, and trailing zeroes to fill up the decimal places. For a format of 999.000:

26.200
334.456

- 9.9 This format shows numbers only, with leading or trailing spaces:

26.2
334.456

- *.0 Inserts leading asterisks as cheque protection characters; adds trailing zeroes to the right. For a format of *****.00:

***26.20
**334.46

- 0.0 Inserts both leading and trailing zeroes. For a format of 0000.000:

0026.200
0334.456

Selecting Numeric Format Features

You may choose from four number sign styles:

- This button is preselected. It causes Superbase to print a minus sign if the number is negative, a space if the number is positive. Shown as - in the number format panel.
- +/- Prints a minus sign if the number is negative, a plus sign if the number is positive. Shown as + in the number format panel.

(-) Prints parentheses instead of the minus sign. Can be selected in conjunction with one of the above. Shown as (in the number format panel.

None No selection means that Superbase does not leave a space for the sign as part of the format, but inserts a minus sign when the number is actually negative. May result in non-aligned columns.

There are two possible currency sign styles:

\$9 Places the currency sign immediately to the left of the first digit in the format:

\$26.20
\$334.46

Shown as \$9 in the number format panel.

\$ 9 The currency sign is outriding -- it appears to the left of the format, always in the same place. For a format of \$ 9999.00:

\$ 26.20
\$ 334.46

Plus and minus signs also outride when this style is selected.

You may choose your preferred currency sign from the Set Options requester. This is a global setting and may not be varied from field to field.

There are three other features affecting numeric formats:

(0) Blank when zero. This makes Superbase print a blank space instead of a zero when the number to be printed equals zero. Shown as z in the number format panel.

(.) Thousands separator. Numbers greater than 999 are printed with a separator, e.g. 1,100. Normally the separator is a comma and the decimal point is a period or full stop, but alternatives may be selected from the Set Options requester. Shown as a comma in the number format panel.

- E Exponential format. All numbers whose format includes an e will be expressed with an exponential signifier at the end. This allows you to enter numbers much larger than the normal 13 digit precision permits. Shown as e at the right of the number format.

Overflow

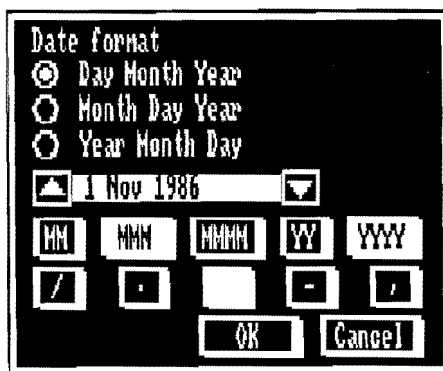
If the number entered into a numeric field is too big for the format, Superbase displays number signs to indicate an overflow condition:

*****.***

You can easily edit the numeric format to make it longer, or, if you prefer, include an exponential signifier in the format (see above).

DATE FIELD

Date fields can accept any date (years 0001 to 9999). There are many possible styles of date expression.



When the date field requester appears, the date is in the default date style. This is initially European (day, month, year), but you can reset it by altering the style

with the Set Date menu option.

Changing the System Date

The box in the middle of the requester shows the current Superbase system date. To change the date, click on the left arrow to increase it, or the right arrow to decrease it. Superbase remembers the new date whether you set it from here or the Set Date option.

CAUTION. Other programs will also use this date as their system date during the current session.

You can also edit the date directly by clicking in the box.

The system date always reflects the current date style as determined by your selections.

Day Month Year Order

Click on one of the buttons in the upper part of the requester to set the order in which the day, month and year are presented.

Month Style

You can choose one of three possible month styles:

MM Number from 1 to 12.

MMM Three letter abbreviation: Jan.

MMMM Full name of month: January.

Year Style

You can choose one of two possible year styles:

YY Last two digits of the year: 86. This always implies the current century.

YYYY The full year: 1986.

Separators

There are five kinds of separator to choose from.

/ 1/10/86

- 1-10-86

space 1 10 86

. 1.10.86

, First separator is space, second is a comma
followed by a space: 1 October, 1986 or Oct 1,
1986.

Dates As Numbers

Although dates are expressed as text, they are stored internally as numbers. This means you can include them in arithmetical expressions, allowing the construction of date formulas and validation checks (see below). You can also construct an index on a date field knowing that it will be kept in true date order.

EXTERNAL FILE FIELD

The requester for the external file field type is exactly the same as the text field requester, and operates in the same way.

The difference between the field types is that an external file field is intended to contain a file name, while a text field can contain anything.

The file names in external file fields are used in Superbase's External File System, which allows you to find and display graphic images or text files created with other programs. It's a kind of built-in "picture library" application.

For more details, see the External File Management System section.

FORMULAS

Every field in a Superbase file must be one of the four types we have looked at so far: text, numeric, date or external. When you look at the File Definition requester, you will see that on the right above the OK Clear Cancel buttons there are three more field selection options: Validation, Calculation, and Required. You can select Required for any field, but Validation and Calculation are alternatives: you cannot set both for the same field.

VALIDATION FORMULA

A validation formula sets the limits to what you can enter into the field. For example, a formula such as:

lastname LIKE "Tom" OR lastname LIKE "Jerry"

would restrict the name field to the values "Tom" or "Jerry". Alternatively, you might want to set a numeric range:

amount >= 100 AND amount <= 200

This requires the entry to be between 100 and 200 inclusive. Dates may also be validated:

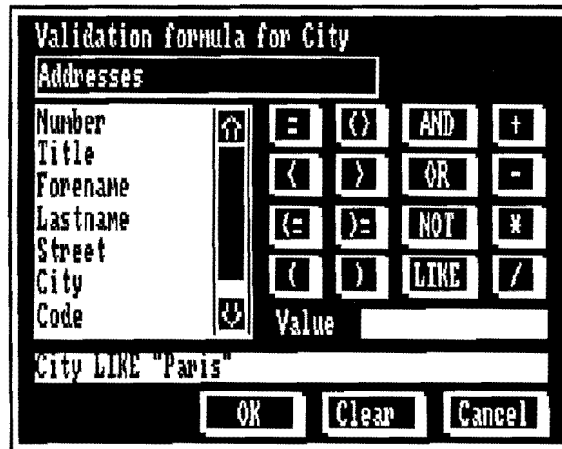
date > "1/6/86"

The date entered must be after 1st June, 1986. Note that the interpretation of the Day/Month/Year order of the date will depend on the system date format, not the format for the field.

Constructing a Validation Formula

You create a validation formula by making selections from the Formula requester, which you obtain by clicking on the Validation button in the File Definition requester.

Note: If you are creating fields to which you are attaching validation formulas you must ADD the field *before* constructing the formula.



As you can see, the requester is basically the same as the Filter requester described in detail in Getting to Know Superbase. It has three main parts:

1. A Field Name Panel.
2. A calculator style set of Operators, including a Value Box for typing in actual values such as "joe" or 100.
3. A Main Box, which shows the formula changing as you make your selections.

The basic procedure is very simple:

1. Click on the name of the field to which you are attaching the formula.
2. Click on an operator.
3. Click on another field or in the Value Box and enter a value -- don't use quotation marks.
4. Press Return.

This produces a single validation check. If you want to set alternatives, click next on OR, then repeat the basic procedure. If you want to set a range, click on AND, then repeat the basic procedure.

To clear out the Main Box, click on Clear. When you've finished the formula, click on OK.

Checklist

Here are some useful facts about the Validation Formula requester:

- * The maximum length of a validation formula is 255 characters.

- * You can place field names on either side of an operator:

field 1 > field 2

- * Superbase stops you making simple mistakes. It shows this by flashing the screen at you.
- * You can use parentheses to set priority levels for your formula:

amount = 10 OR (amount > 20 AND amount < 30)

- * To allow the operator to skip a Numeric or Date field, you must include a "zero option" in the formula:

amount > 10 OR amount = 0

The same applies to Text fields, except you type "" into the Value Box instead of 0.

- * The LIKE operator is intended for text string matching, as it is case insensitive, unlike the EQUALS operator.

country LIKE "England"

LIKE may also be followed by a value that uses one or more of the pattern matching rules and characters. Here is a typical example:

Lastname LIKE "[A-F]*"

This formula accepts an entry of any length, provided it begins with a letter from "A" to "F" (either case). More details of pattern matching with LIKE are in Appendix B.

- * If you click in the Main Box, you can edit the formula

directly. This is essential for making changes to an existing formula, but Superbase cannot check this kind of editing, so you could end up with an invalid formula, or one that did not do what you intended. Errors in the formula could allow invalid data into the field, or produce error messages during data entry.

The other use for direct editing of the formula is to add functions which are not available from the selections in the requester. See Appendix C for more details.

CALCULATION FORMULA

This type of formula is the alternative to a validation formula. You shouldn't need to validate a calculation itself, as the component fields of the formula can be validated independently.

Calculation formulas can be attached to any type of field. A calculation formula works out and displays a result that depends on other fields and values. You cannot edit a calculation formula field directly, except when it contains a constant value (see below).

Here are some examples of typical calculation formulas.

Product: quantity * price

Sum: subtotal 1 + subtotal 2 + subtotal 3

Percentage increase: amount * (1 + Increase / 100)

Formulas are usually arithmetical and attached to numeric fields, and as such rarely make use of relational operators like "greater than" or "less than".

There are restrictions on the combinations of types of field in a formula expression. Superbase will let you know if you break a rule, by trying to multiply two text fields, for example. Remember, though, that you can treat date fields as numbers.

You can create formulas for text fields by typing directly in the Formula box:

`left$ ( name,5 ) + " / " + str$ ( serial number )`

This could produce a result like "Johns/00042", which could in turn be the basis of an index.

Date formulas are also valid. They can be used to generate a date in the future or to compute the number of days between two dates. For example:

`date + 90    or    date2 - date1`

You can also use a reserved word, TODAY. This returns the current Superbase system date which may be used in Calculation and Validation formulas, or used in field expressions for output in query.

Constructing a Calculation Formula

You do this in the same way as you create a validation formula, except that you must not include the name of the field you are working with in the formula itself. If the current field was "total", this formula would be illegal:

`total + amount`

Constant Field Values

Although a calculated field is normally not editable, you can create a special type of Constant field which does allow editing. A typical such formula would be:

`"London"`

There are no Operators. This tells Superbase to place the value in the field every time you create a new record for the file. The field may be of any type. This feature could provide an easily variable system date for automatic insertion into new records, or any other field value which changes little or infrequently.

Checklist

- * Superbase can stop you making simple mistakes, but you can still produce meaningless formulas if you try hard enough, or if you edit the formula directly in the Main Box.

- * If you need to construct a very complex formula, it may be easier to set up some intermediate calculation formulas than to try to achieve the desired result in a single very large formula.
- * The maximum length of a calculation formula is 255 characters.
- * The number of decimal places in a calculation result may be set with the directly entered FIX function, e.g. FIX (amount / 3, 2). See also page 11-70.

Details of functions that must be entered directly are in Appendix C.

REQUIRED FIELD

You may designate any field as a Required field. This means that during data entry you must enter a value -- you cannot leave a required field blank.

ADDING A NEW FIELD: THE ADD BUTTON

When you have finished setting the details for a field and attached a Validation or Calculation formula if one is needed, you still have to go through the step of adding it to the list of fields in the upper File Definition Panel, by clicking on the ADD button. You must also do this before you enter a Validation or Calculation formula against a field.

When you do this, Superbase does the following:

1. Copies the name from the Field box into the File Definition Panel, adding it to the existing list of names if there is one.
2. Shows abbreviations to indicate the field type selections. These appear across four columns:

TXT	VAL	REQ	IXD
NUM	CAL		IXU
DAT	EXT		

Or, in full:

Text	Validated	Required	Duplicates index
Numeric	Calculated		Unique index
Date	External		

The IXD and IXU attributes are explained below, in the sections on Indexes.

3. Shows the format of the field. For a text field or an external field this is the length in characters. For a numeric field it is the digit pattern plus certain characters to show which style features have been included. and for a date field it is a representation of the day, month and year style you selected.

Validation and Calculation formulas are not shown. You may view or print them with the System Status File option.

4. Finally, Superbase clears the Field Box and the type selection buttons. You can either define another field or exit from the definition requester.

DELETING A FIELD: THE DEL BUTTON

This is really an editing feature, and we cover it fully in a later section. Clicking on DEL marks the selected field, causing the "DEL" abbreviation to appear in the Attributes column against the field name. The field will not be removed from the disk until you Reorganize the file.

CONCLUDING FILE DEFINITION: OK, CLEAR AND CANCEL

Clear Removes all settings for the selected field.

Cancel Exits back to the main display without creating a new file definition.

OK Holds the details of all the fields you have placed in the File Definition Panel, and displays the New Index requester (see next section).

CREATING INDEXES FOR A FILE: NEW INDEX*Overview*

A Superbase index is a separate file that is related to the main data file. It corresponds to one of the fields in the File Definition. The index keeps a copy of all the data you enter into that field, stored in alphabetical order (actually spaces, punctuation marks and numbers come before the alphabet).

An index file on disk has a name of the form "file name.nnn", where "file name" is the same as for the data file to which the index is related, and "nnn" is a number corresponding to the position of the indexed field in the File Definition's list of fields. Example: "addresses.1".

An index is used in two ways: to provide a quick method of looking up individual records, and to provide a sequence for the presentation of records.

IXD and IXU. These are the attribute abbreviations you see in the File Definition Panel. An IXD field has an index which allows duplicate entries, such as many occurrences of the name "Smith". IXD indexes are compulsory when the field already exists. An IXU field has an index which does not allow duplicate entries: each entry must be unique.

You use the Key Lookup button on the Control Panel to enter an index value when you want to retrieve a single record by key. You use the Open Index option when you want to switch the order of presentation from one field to another.

You can select the New Index option at any time to build an index on any field in the File Definition. When you're creating a new file, however, you are forced to pass through this requester, as every Superbase file must have at least one index.

You may have up to 999 indexes for each file, using any of the first 999 fields in the File Definition. All indexes are automatically updated when you add records to the file. If you create a large number of indexes, updating them will obviously take longer than if there are only a few indexes to process.

Selecting Fields for Indexing

The New Index requester shows a list of all the fields that do not have an index built on them, and asks you to select one.



Click on the name of the field on which you want the file to be indexed. Superbase copies it into the Selection box. If you have entered this requester from the File Definition requester, you now have to decide whether the index is to contain unique entries only or to permit duplicate entries. Click on the appropriate button.

However, if you are building an index on a field in a File Definition that's already in use, you don't get the choice: the index must allow for duplicate entries.

Now click on OK. What happens next depends on whether you are creating an index for a file that already has records in it or for a new file that has no records.

Existing Files

If you are adding an Index to an existing File Definition, Superbase shows a warning message:



Click on OK to proceed. If you have been specifying indexes for a new file, Superbase creates all the disk files that comprise the database file: the ".sbf" extension file for the record data, the ".sbd" file for the definition, and the ".nnn" files for the indexes.

Otherwise, if the file already exists, Superbase spends some time reading through the records and creating an index from their contents.

THIRTY MINUTE TUTORIAL

Now that you've read about setting up a file and defining fields, let's go through an example to see how you do it in practice. In this example you are going to set up a Deposits file, which will include names, addresses and bank deposit details. The tutorial will take about thirty minutes to complete, so allow yourself enough time.

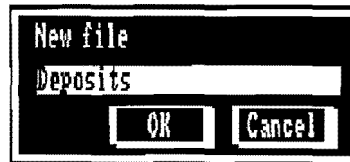
Briefly, there are three stages to this tutorial:

1. Select New File from the Project menu, and type in the file name.
2. Enter the field names and details.
3. Specify Index fields.

Start by selecting New File from the Project Menu. Move the pointer to the Menu Bar and highlight the Project Menu, then select New. Move the pointer across to highlight the File subitem, and release the mouse button.

New File Name Requester

Superbase displays the following requester:

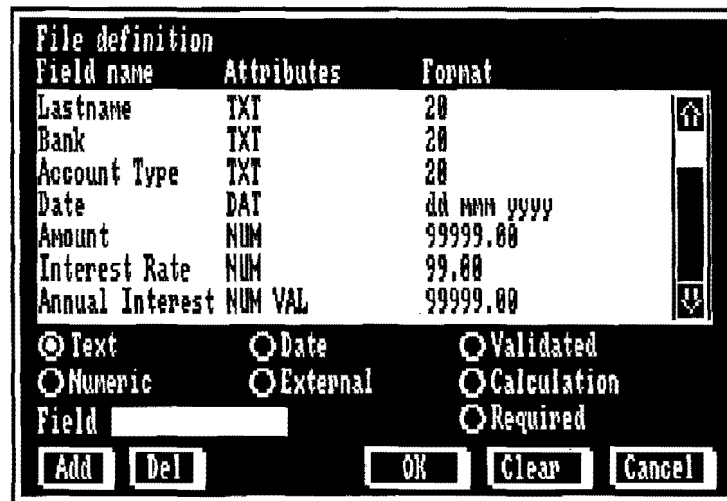


A dialog box titled "New file" with a text input field containing "Deposits". Below the input field are two buttons: "OK" and "Cancel".

You now have to type in a file name. For this tutorial we are going to create a file called Deposits. Move the pointer into the box and click on the left-hand button of the mouse to obtain the cursor.

Now type in "Deposits", and press Return.

Superbase displays the File Definition requester.



A dialog box titled "File definition" containing a table of field definitions and a list of field attributes.

Field name	Attributes	Format
Lastname	TXT	20
Bank	TXT	20
Account Type	TXT	20
Date	DAT	dd mm yyyy
Amount	NUM	99999.00
Interest Rate	NUM	99.00
Annual Interest	NUM VAL	99999.00

Below the table are three columns of radio button options:

- ☒ Text
- ☐ Numeric
- ☐ Date
- ☐ External
- ☐ Validated
- ☐ Calculation
- ☐ Required

At the bottom is a "Field" label followed by an empty text input field, and three buttons: "Add", "Del", and "OK".

We can now define the fields for the Deposits file, which are:

- * Number
- * Forename

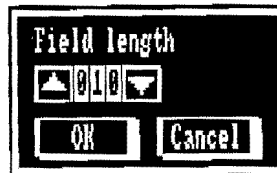
- * Lastname
- * Bank
- * Account Type
- * Date
- * Amount
- * Interest Rate
- * Annual Interest

Number

This is going to be the reference number for each record and will be a required field. We'll set up this field as a text field because it will contain both alpha and numeric characters.

The procedure for defining a field is quite simple. First the field name must be typed into the field box. So click in the Field Box and type in the field name "Number".

Next, you have to define this field as a text field, so click on the Text button. Superbase then displays the Field Length requester.



This requester enables you to set the length of each Text field. The default value is 20 characters, which is the value you can see on your screen. The Number field only needs a length of 10 characters, so move the pointer and click on the 2, then click on the downward arrow once. As you do this you will notice the 2 changes to a 1.

Once you've set the field length click on the OK button to clear the screen and return you to the File Definition requester.

Now we have to make the number field a Required field, so that it can't be left blank by mistake. So click on the Required button. Superbase places a dot in the middle of this circle to show that this attribute has been selected,

making the Number field a required field.

This field is added to the file by clicking on the ADD button.

Do this now and watch the screen.

Superbase displays the field name in the File Definition Panel along with its attributes and field length. Check that these details are correct before moving on to the next field.

Forename

The next field to enter is Forename, which will also be a text field, but not a required field.

Move the pointer and click in the field box, then type in Forename. Click on the Text button to call up the Text Length requester. You'll see that Superbase carries over the value from the last time you used the requester, so you need to adjust it for this field, which is to be 20 characters long. Click on the middle digit, then click once on the up arrow to increase the 1 to a 2.

When you've done this, click on OK to exit back to the File Definition requester. Now you can add this new field by clicking on the ADD button. Once you've done this if you look at the File Definition Panel you will see that the field you have entered is shown on the second line.

Lastname, Bank, Account Type

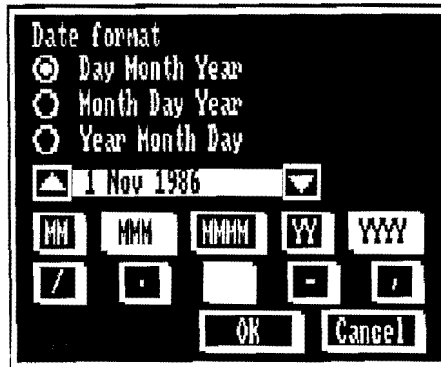
You can create these three fields even more easily than the last two. Enter the field name, but don't click on the Text button. Click instead on the ADD button, and you'll see that Superbase adds the field with the value taken from the last time you used the Text Length requester: 20 characters. This is only possible with text fields. Add these three fields now before going on to the next field.

Date

This is slightly different from the fields you've created so far because we are going to define it as a Date field.

However, you start off the same way. Move the pointer and click in the field box and type in the field name, which is Date.

Now you must define the format in which dates are to be displayed. Click on the Date button. Superbase displays the following requester:

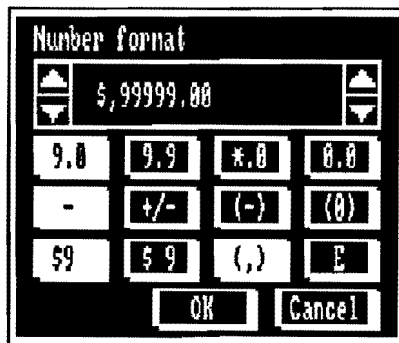
A dialog box titled "Date format" with a black background and white text. It contains three radio buttons for date formats: "Day Month Year" (selected), "Month Day Year", and "Year Month Day". Below these is a text field showing "1 Nov 1986" with a calendar icon on the left and a dropdown arrow on the right. Underneath are two rows of buttons for date components: the first row has "DD", "MM", "MMM", "YY", and "YYYY"; the second row has "/", ".", a blank box, "-", and ",". At the bottom are "OK" and "Cancel" buttons.

If you look at the requester you will see the current system date is displayed in the default format of Day, Month, Year (DD MMM YYYY). In this format DD is the day, MMM is a three letter month abbreviation and YYYY is the full year. We will use this format, so click on the OK button.

Finally, add the field to the file by clicking on the ADD button.

Amount

This field will contain the balance for each record within the Deposits file and therefore we must define it as Numeric. Once again the field name is entered in the same way as before, by typing the word Amount into the Field Box and pressing Return. However, this time you must click on Numeric instead of Date. Superbase will display another requester which looks like this:



As with the Date Format requester, Superbase will show the default Format. We will change this to include a currency symbol and a separator for thousands.

Move the pointer and click on the \$9 button, then click on the (,) button.

Once you've done that click on the OK button, and when you're back at the File Definition requester click on the ADD button to add this field to the file definition.

Interest Rate

This field will be set up as a Numeric field, and we will introduce a validation check to limit the range of values that can be entered. We'll define this range as being greater than zero and less than 15.

Type in the field name in the usual way, then click on the Numeric button. Notice that Superbase has carried over the format and the features from the previous numeric field. This can be very useful when you have to create many fields with the same format one after another.

For Interest Rate, we will need to change the Number format. First, the number is not going to need a space for a sign, as it's never going to be less than zero. So, click on the - sign button to deselect it. Then deselect the \$9 and the (,) buttons in the same way -- these features are not needed for this field.

Next you need to shorten the number format. Click on the down arrow on the left-hand side of the number format panel. As you do this you will notice that the number format changes from 99999.00 to 9999.00. Click the arrow until the number is reduced to 99.00.

Once you've done that click on OK. Now click on the ADD button. Superbase adds the Interest Rate field to the File Definition Panel.

Next you're going to add a range check to this field. Click on the Interest Rate field name to reselect it and copy its name into the Field Box. Now click on the Validation button. Superbase displays the Formula requester.

Validation formula for Interest Rate

Deposits

Firstname Lastname Bank Account Type Date Amount Interest Rate

= < > <= >= <> AND OR NOT LIKE + - * /

Value

Interest Rate >= 0.0 AND Interest Rate <= 15

OK Clear Cancel

This requester enables you to create the validation formula that will be used by Superbase each time a value is typed into the Interest Rate field. The formula will ensure that every Interest rate is within the permitted range.

The formula you want is:

Interest Rate >= 0 AND Interest Rate <= 15

Do this in stages. Move the pointer into the Field Name

Panel and click on the down arrow to bring the field name Interest Rate into view, and then click on Interest Rate. Next, click on the $\geq$ button. Now you have to enter 0 in the Value Box. You do this by moving the pointer into the Value Box and clicking on the left-hand button of the mouse. This produces the cursor. You can now type in "0" (omit quotation marks), and press Return. Superbase has copied your selections into the Main Box, and your Validation Formula should read like this:

Interest Rate $\geq$ 0

To make a link to the next part of the Formula, you click on the AND button. Now repeat what you did before: click on Interest Rate, then (slightly different) on the $\leq$ button, and then in the Value Box, where you type "15", and press Return. Your Formula should look like this:

Interest Rate $\geq$ 0 AND Interest Rate $\leq$ 15

If you've made any errors, you have a choice of how to correct them. Either click in the Main Box and edit the Formula directly, or click on Clear and repeat the steps above.

Once the formula is correct, click on the OK button, and Superbase will return to the File Definition requester. Notice that Validation is now shown as selected.

Superbase updates the File Definition Panel to show VAL under the Attributes column, but it does not show the Validation formula; you can use System Status File to look at it later.

Annual Interest

This is the last field we need to enter for this file, and it's going to be a Calculation Formula field. This means that Superbase will calculate a result for the field based on the values of the fields referred to in the formula, in this case Amount and Interest Rate.

So, click on Clear to remove Interest Rate from the Field Box, and then click in the box and type in the field name Annual Interest. Click on the Numeric button. The format needs to be reset from the format used for Interest Rate. Click on the \$9 and (,) buttons to set the currency sign

and thousands separator, and the - button to give the format a space for a minus sign. Then click on the left-hand up arrow four times to expand the format, which should look like this: -\$999999.00.

When it's right, click on OK to exit back to the File Definition requester. Don't click on ADD yet.

Next, click on Calculation. Superbase displays the Calculation Formula requester, which works exactly like the Validation Formula requester you have just used. Notice that the previous formula is carried over.

What we want Superbase to do is to calculate how much interest is due for each balance based on the current interest rate, and then display this value in the Annual interest field.

So, the formula to calculate the amount of interest is:

$\text{Amount} * \text{Interest Rate} / 100$

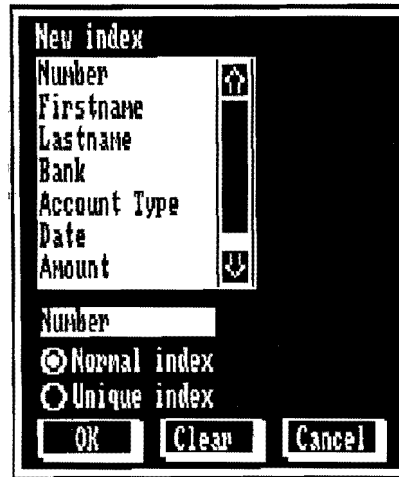
You should be able to do this without detailed guidance. Click on Clear to empty the Main Box. Now click on the field name Amount, the * button, the field name Interest Rate, and the / button. Then click in the Value Box and type in the value "100". Press Return. The Formula should read as above. Once it's correct you can click on the OK button.

This field is then added to the file in the usual way by clicking on the ADD button.

That completes the entry of the fields, so now you can click on OK in the File Definition requester.

New Indexes

Superbase now clears the requester from the screen and displays the New Index requester.



This is the last part of the process of setting up a file, which is to specify the field names you want to use as indexes. If you look at the screen you will see a list of the field names you have just entered. What we have to do now is to decide which fields to use as indexes. For the Deposits file we want indexes on Number, Lastname, Bank and Amount.

You can only specify one index at a time. So, move the pointer and click on Number. As you do this Superbase displays this field name in the box at the bottom of the list. Also notice that Superbase has highlighted the Normal Index button, indicating that duplicate index entries may be allowed. Since the Deposits file may have several deposits for each customer, Normal is the right type for this index. So, click on the OK button.

You can now repeat this exercise for Lastname, Bank and Amount, creating a Normal Index for each one. Notice that each time Superbase re-displays the New Index requester, the field name you used to specify the previous index has been removed.

When you have completed that, don't select anything else from the list, but click on the OK button. This informs Superbase you have finished making your selections and it

can proceed to save the File Definition and create the Index Files.

Once the Indexes have been built Superbase displays the file in the format of the current view. The file will be indexed on the first index you specified, in this case Number, as shown by the message on the title bar at the top of the window.

Superbase also displays a blank record showing the field names you set up in the File Definition. You can now begin to enter records into the file. For further information please see the next section, Using the Record Menu.

That's the end of the tutorial. By now you should be able to create a file of your own, and we recommend that you do this for practice before moving on to the next section. Remember to write down the fields that you want, and to decide what type of fields they are going to be, before you start creating your file. Good luck!

THE SUPERBASE WORKING ENVIRONMENT

In the Superbase system, you can have any number of database files. Each file can have as many as 999 indexes, and there is no limit to the number of fields per record. This effectively gives you the freedom to construct your database as you wish, without having to worry about whether you're going to bump into inconvenient system limits.

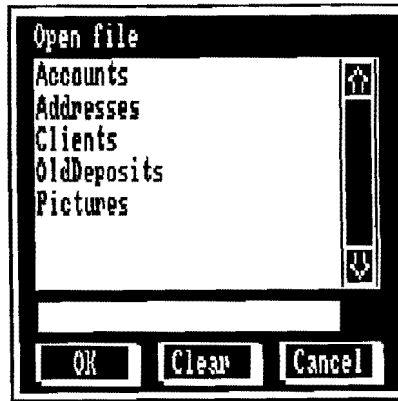
However, when it comes to actually working with the system, such a sense of limitlessness can be confusing. Most people prefer to have a well defined structure that they can manage easily. Superbase certainly gives you this, but without sacrificing the flexibility that the basic "no limits" philosophy implies.

In this section we'll be looking at how to define your area of work to suit your immediate purpose. Basically, Superbase allows you to select four components to make up a working database:

- * A File
- * An Index
- * A set of Fields
- * A current Query

OPEN FILE

This option lets you choose the files you want to work with.



Superbase presents you with a list of all the files in the current directory. To open a file:

1. Click on a file name.
2. When it appears in the Selection Box, click on OK.

If you want to alter the name in the Selection Box, you can:

- * Click on another name to replace it.
- * Click on Clear to empty the box.
- * Click in the Selection Box and edit the contents. You might need to do this if your file is in another directory and you need to insert the pathname, or the file requires a password.

Passwords

Click in the Selection Box, move the cursor to the end of the file name, type a semicolon and then the password or passwords that you specified when you originally created the file. Use a semicolon to separate passwords if there

are more than one. If the password or passwords are correct Superbase will open the file for you.

Opening the Current File

When you select a file name and click on OK, Superbase finds the File Definition for that file and returns you to the Main Display.

If the file is being opened for the first time in the session, Superbase automatically selects the first Index for the file, determined by the position of the Index field in the File Definition. The record selected for display is then the first record according to this Index.

If you have already opened the file during the session, Superbase returns to whichever Index and record were current when the file was last used.

The file you see on the Main Display is known as the current file. You can always tell which is the current file by looking at the title bar of the main display window, which names both the file and its current index:

Superbase: Addresses indexed on Number

There is only one current file at a time, although you may have many files open.

Current File and Open Files

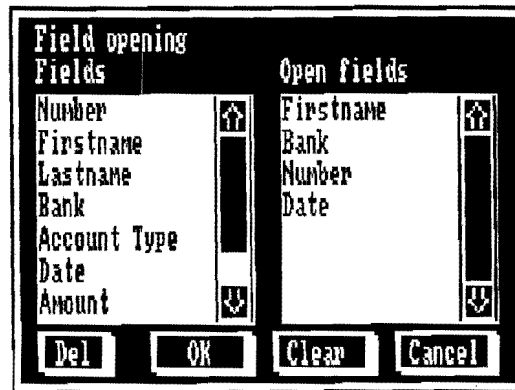
You can return to the Open File requester and open as many files as you want, each time choosing from the list of files in the directory. Each time you select a file, it becomes the current file. However, all the files you select in one session remain open and available to other Superbase functions, unless you specifically close them with the Close File option.

Superbase functions that use the list of open files are:

- Project Close File
- Project Remove File
- Process Update
- Process Query
- System Status System

OPEN FIELDS

This is one of the most important options in the whole Superbase system. You use it to select a group of fields from the list of fields in the File Definition. These fields then become the default fields for many Superbase functions, including the Main Display. Thus if you have a file with many hundreds of fields per record, you can choose, if you wish, just three or four to work with.



Once you've selected Open Fields from the Project Menu, the basic procedure is simple:

1. Click on a field name in the left-hand panel.
Superbase copies it into the right-hand panel.
2. Repeat until the selection of fields you want is in the right-hand panel.
3. Click on OK.

The list of fields in the right-hand panel is called the Open Fields List. Here are some tips to keep in mind when using this function:

- * You can select fields in any order.
- * You can repeat fields.
- * You can remove a field from the Open Fields List: click on its name, then click on the DEL button.

- * Repeated clicking on DEL removes field names from the bottom of the list.
- * To move a field to a new position in the list: click on its name in the right-hand panel; click on DEL; click on the field before the desired new position in the right-hand panel; click on the field name in the left-hand panel.
- * To remove the Open Fields List completely, click on Clear.

If you want to temporarily suspend the Open Fields List so you can view the full set of fields, use the Close Fields option (see below).

The Open Fields List

Superbase uses the set of open fields in most of the menu options:

- * The Main Display, Record, Form and Table View.
- * Record New, Record Edit, and Record Duplicate.
- * Process Query, Process Import, Process Export, Process Print, and Process Labels.

OPEN INDEX

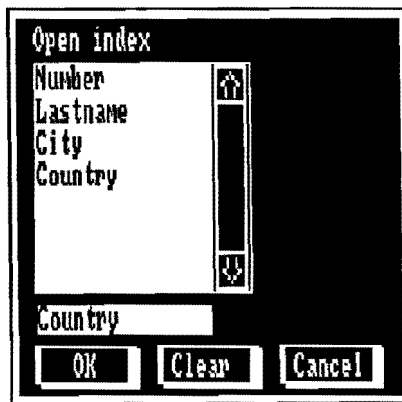
The index that you select determines the order in which the records in the current file are presented. If, for example, you have a file of addresses for which Superbase maintains indexes on the Lastname field and the City field, you can choose to view or print the records in the alphabetical order of either Lastname or City.

Superbase allows only one current index at a time, as indicated on the title bar of the Main Display. It's important to note two things about the restriction to one index at once:

- * It does not restrict your ability to specify multiple values when searching for a group of records in the file using a filter.
- * It does not limit your ability to produce reports with many levels of sorting and subtotalling.

When you select the Open Index option, Superbase displays

a requester with a list of all the indexes for the current file.



Choosing one is easy:

1. Click on the name of the Index you want.
2. When the name appears in the Selection Box, click on OK.

If you make the wrong selection, change it by clicking on another Index, clicking on Clear, or typing directly into the Selection Box.

When you click on OK, Superbase opens the required Index and returns to the Main Display. The name of the open Index appears on the title bar:

Superbase: Addresses Indexed on Lastname

All browsing operations done from the Control Panel now follow the order of the index. The Key Lookup button allows you to type in a single index entry in order to retrieve an individual record directly.

Changing the Index

To switch from one index to another, use this menu option and select the required index as described above. Superbase will not change the current record when you do

this, but all Control Panel browsing operations will follow the order of the new Index.

If you need a new Index on a field that doesn't have one, you must use the New Index option to build the Index.

Each Index points to one record in its file. This means you can swap to another Index, browse through the file in the order of that Index, and then return to the first Index and view the record it was originally pointing at.

OPEN QUERY

Superbase allows you to keep the details of any number of Query files on disk. These are in effect mini-programs, stored with the Project Save Query option. So you can create an unlimited set of reports for any database file, any one of which can be used by simply opening it and then calling up the Query requester from the Process Menu.

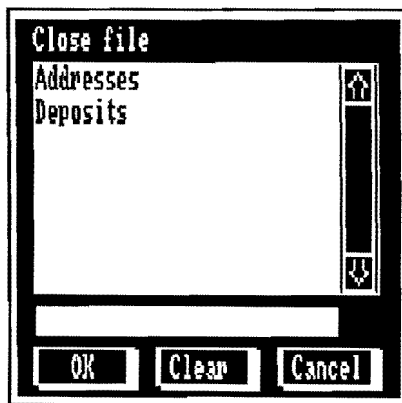
When you select Open Query, Superbase shows you a list of all the Query files in the current directory. You click on the one you want, and when Superbase copies its name into the Selection Box, you can click on OK to select it. When Superbase has found and loaded the Query file, you can select Process Query to view the details and change them, or just click on OK to use it immediately.

CLOSE FILE

You will need to close a file in two situations:

- * To restrict the open files to the ones required for the Process Query and Process Update functions.
- * To release memory for other applications.

The requester provides a list of the currently open files, including the current file.



The procedure is standard:

1. Click on the name of the file you want to close.
2. When the name appears in the Selection Box, click on OK.

If you make the wrong selection, change it by clicking on another file name, clicking on Clear, or typing directly into the Selection Box.

If you close the current file, Superbase makes the first open file in the list into the current file, and returns to the Main Display. If you close all the files in the requester, you'll see the "Superbase: Please open a file" message which the system shows when you start up.

CLOSE FIELDS

Amiga-C

Superbase suspends the Open Fields List, notifies you of its action, and returns to the Main Display. The full set of fields for the file is then used by the current View format.

To re-activate the Open Fields List, select the Open Fields option and click on OK.

EDIT: CHANGING A FILE DEFINITION

However careful you are when you design and create a new file, there inevitably comes a time when you want to change some details. Maybe you made a text field too short, or you find overflow characters appearing when you try to enter data into a numeric field. Or perhaps you decide that a certain field needs a range check adding to ensure the integrity of the data in it. Superbase lets you make almost any change to the original File Definition, and carry on using the file without any delay. You even have a choice which allows you to use the File Definition settings experimentally until you're sure they are what you want, before saving them permanently.

First, you make the file you want to change into the current file, by opening it. Then you select Edit from the Project menu. The requester is the same as the one used in New File.

Field name	Attributes	Format
Number	TXT REQ IXD	10
Title	TXT	10
Forename	TXT	15
Lastname	TXT IXD	15
Street	TXT	30
City	TXT IXD	15
Code	TXT	12

☒ Text ☐ Date ☐ Validated
☐ Numeric ☐ External ☐ Calculation
☐ Required

Field Lastname

[Add] [Del] [OK] [Clear] [Cancel]

You will notice that the File Definition Panel contains the first seven fields in the definition. If there are more than seven you can bring the others into view with the scroll bar at the side of the Panel.

Here is a summary of possible changes to a File Definition. You can:

- * Use ADD to add new fields to the end of the list of fields.
- * Use DEL to mark a field as deleted.
- * Change the Attribute type of a field.
- * Change the Format details of a field, such as length, date style, validation or calculation formula.

Adding a New Field

Do exactly what you would do if creating a field in the New File option:

1. Ensure the Field box is empty -- click on Clear if necessary.
2. Type in the new field name.
3. Click on the appropriate attribute button and add the required details in the Field Type requester.
4. Click on ADD and the field name will appear at the end of the existing list.

Changing a Field

The basic procedure for changing a field is similar to that for creating new fields:

1. Click on the name of the field you want to change. Superbase copies its name into the Field box, and selects the buttons that correspond to the field's attributes.
2. Change the field name if you want to.
3. Click on an attribute button to bring up a Field Type requester so you can alter the details of the field. You can choose a different type from the existing type.
4. When you click on OK in the Field Type requester, Superbase updates the File Definition Panel with any changes you made.
5. When you've finished making changes to fields, click on OK in the File Definition requester itself. Superbase asks you whether you want to save the modified definition. You also have the option to use it as it is, either saving or abandoning it later.

*Rules for Changing Fields**Text*

- * Length may be varied freely.
- * Validation or Calculation formulas may be added, changed or removed.
- * Required status may be added or removed.
- * Type may be changed to numeric, date, or external:
 - * If numeric, all text will be lost when the field is next saved.
 - * If date, all non-date text will be lost when the field is next saved.
 - * If external, Superbase will not be able to find non-existent external files, and will reject any text that would be an illegal file pathname.

Numeric

- * Number pattern and features may be varied freely.
- * Validation or Calculation formulas may be added, changed or removed.
- * Required status may be added or removed.
- * Type may be changed to text, date, or external:
 - * If text, the number will become a character string.
 - * If date, the number will be treated as a julian date and interpreted according to the style you choose.
 - * If external, Superbase will not be able to find non-existent external files, and will reject any text that would be an illegal file pathname.

Date

- * Date style may be varied freely.
- * Validation or Calculation formulas may be added, changed or removed.
- * Required status may be added or removed.
- * Type may be changed to text, numeric, or external:
 - * If text, the date will become a character string of the julian date, i.e. a string of numbers.
 - * If numeric, the date will be displayed as a number according to the numeric format you select.
 - * If external, Superbase will not be able to find non-existent external files, and will reject any text that would be an illegal file pathname.

Validation and Calculation

- * The details of the formula may be varied freely.
- * The formula may be removed by clicking on Clear, then OK.
- * Required status may be added or removed.
- * Note that direct editing of the formula may make it invalid.

Required

- * May be added or removed.

Note that increasing the length of a field may cause it to overlap with another field in Form View, creating a confusing display until the Form View is changed.

Deleting a Field

First select the field by clicking on its name so that the name is copied into the Field box. The click on the DEL button. Superbase places the DEL abbreviation in the Attributes column of the File Definition Panel.

When you do this, Superbase leaves the field data in place in the ".sbf" file, and leaves the field name in place in the File Definition, until EITHER

- * You tidy up the file with the System Reorganize menu option;

OR

- * You use the Process Update menu option. In this case Superbase removes the data from the file for the records it actually processes during the update. The File definition is not affected by Update.

Because of the delay between marking a field as deleted and actually removing the data, you can recover deleted fields by clicking on them and selecting the appropriate Attribute type button, as for a new field.

Concluding File Editing

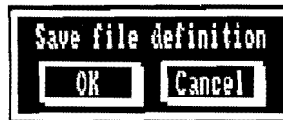
When you have finished making changes to your File Definition, you must click on OK to put the modified definition into effect. Superbase displays the Save File Definition requester, which is explained below.

SAVE

The Save option allows you to store the details of the current File Definition or Query on disk.

Save File

This option stores the File Definition of the current file.



All the current settings as shown in the File Definition requester are saved, together with any Validation or Calculation Formulas. Superbase also stores the coordinates of all the fields as most recently arranged in Form View.

If you click on OK, Superbase will save the File Definition as a ".sbd" file, and the present settings will be the ones used the next time you open the file, unless you edit it again.

If you click on Cancel, however, you can continue to work with the settings as they are, without making any permanent change to the ".sbd" file. This allows you to experiment freely with the details of the File Definition, testing out various settings and formulas until you're sure you've got them right. When you're satisfied, you simply select the Save File option on the Project menu, and click on OK when the requester appears.

Save Query

Use this option to store the settings from the current Query requester. Superbase asks for a file name, as the Query settings are kept in a disk file. To recall a Query from disk, use the Open Query option.

If you close a file Superbase will clear out the current Query settings.

REMOVE

The Remove option on the Project menu allows you to discard database files and indexes that you no longer want. In both cases the process is irreversible.

Remove File

This function is not able to remove records from inside a file while leaving the File Definition intact -- you use the Process Remove option for that. Remove File erases all traces of the chosen Superbase database file from the directory: the ".sbf" file, the ".sbd" file, and any indexes associated with the file.

Superbase presents a standard requester with a list of all the open files. You select a file in the normal Superbase way:

1. Click on its file name.
2. When the name you want is in the Selection Box, click on OK.

To be able to remove a file, you must have opened it with delete privileges. You automatically have these unless more than one password has been set. See Passwords, page 11-3.

Before finally removing the file, Superbase asks for confirmation that this is indeed what you wish to do.

Remove Index

From time to time you may wish to drop an index if you find it is rarely used. This will improve performance slightly and use less memory, as Superbase will no longer have to update the index when you add or replace a record. As for Remove File, Superbase presents a standard requester, this time with a list of all the indexes for the current file. You select an index in the normal Superbase way:

1. Click on its file name.
2. When the index name you want is in the Selection box, click on OK.

As this too is irreversible, Superbase asks for confirmation that this is indeed what you wish to do.

Should you wish to rebuild an index after removing it, use the New Index function.

Removing Other Files

Other kinds of files, such as Export Files, should be deleted using the Amiga CLI utility. This is fully documented in the Amiga User Guides. You can run the CLI from the Workbench at the same time as Superbase, by closing up the Superbase window and clicking on the appropriate CLI icon.

QUIT

When you want to leave Superbase, you can do so by selecting this option. If you prefer, you can click on the Close gadget in the top left-hand corner of the Superbase window.

Superbase first asks for confirmation that you wish to quit. Then, if you have modified records or file definitions but have not saved them, Superbase offers you the option to save them. It then closes down the system and returns you to the Workbench screen.

USING THE RECORD MENU

This section explains how to use the Record Menu. The Record Menu includes a number of options for maintaining the data in the current Superbase file. We shall cover all the menu options:

- * Adding a new record to the file.
- * Editing an existing record.
- * Making a "snapshot" copy of a record (Duplicate).
- * Saving and removing single records.

There is Twenty Minute Tutorial at the end of the section, which will give you practical experience of using the Record Menu.

EDITING FEATURES

Most of the options on the Record Menu involve typing on the keyboard, and as the rules for editing Superbase fields are the same in all options we shall look at them in one place.

The Basic Editing Screen

You can edit and create records from either Form or Record View. If you select Record New, Edit or Duplicate when Table View is set, Superbase automatically switches into Form View.

In both Form and Record Views, you can use the scroll bars to bring any part of the record into view.

In either Form or Record View, you can edit the current record at any time by moving the mouse into a field and clicking to obtain a cursor.

All Fields or Open Fields?

The field names that appear may be all the fields or just a few of them. This depends on whether there is an Open Fields List active. If you only want to enter data into a few of the fields in the record you should open only those fields.

If you do use an Open Fields List, Superbase still processes the fields that do not have data entered into them. If a field fails a validation check because you've left it empty, Superbase will tell you. If indexed fields are left blank, Superbase makes an entry of spaces in the index. Such records come first in the sequence when that index is used. If a calculated field is not open it will have either zero (for numeric fields) or spaces (for text fields) placed in it; the same applies to an open calculated field dependent on a field that is not open.

Field Selection by Menu Option

If you select Record New in *Form View*, Superbase automatically positions the cursor in the first field of the Form, usually at the top left-hand corner. If you select Record Edit or Duplicate, Superbase automatically positions the cursor in the first field on the screen.

If you select Record New in *Record View*, Superbase automatically positions the cursor in the first field of the Form, at the top of the screen. If you select Record Edit or Duplicate, Superbase automatically positions the cursor at the beginning of the first field on the screen.

Field Selection with the Mouse

Use the mouse to move the pointer to the field you want and click once. If you click inside the field, Superbase produces a cursor at the location of the click. In Record View, if you click beyond the end of the field, Superbase moves the cursor just into the editing area; if you click before the start of the field, Superbase moves the cursor to the start of the field. However, if you click below any of the fields, Superbase assumes you have finished editing and makes the cursor disappear.

Field Markers

Each field starts one space after the end of the field name zone. In Record View the end of the field that the cursor is in is marked by a single vertical bar. In Form View all fields have end of field markers.

Moving from Field to Field

Several methods are available:

- * Cursor up or down. In Form View, cursor up and down move the cursor to the next field above or below the current field (the exact move depends on the exact position of the cursor in the field and whether the field names begin in the same column). In Record View, cursor up and down moves up or down a field respectively.
- * Return moves the cursor to the next field. Shift / cursor up moves the cursor to the previous field.
- * Move the mouse and click.

Editing Inside a Field

All typing uses automatic insertion, so if you want to remove characters you must first delete them with the Backspace or Del keys, which function in the normal Amiga way.

In addition, two Control keys are available:

- * Control-X. This deletes the entire contents of the field the cursor is in.
- * Control-Q. This undoes the effect of Control-X, provided you have not moved the cursor out of the field.

These keys work like the Amiga-X and Amiga-Q keys used when editing in a requester text box.

The cursor left and right arrow keys move the cursor around in the field.

If you hold down the Shift key and press the cursor right key, the cursor jumps to the end of the data in the field. Similarly, Shifted cursor left takes the cursor to the start of the data.

The Tab key skips the cursor along eight spaces at a time. Shift / Tab effects a reverse Tab movement.

Entering Dates

For a date field, Superbase uses the format specified for the field in the File Definition as the basis for display. This allows useful short cuts like entering "6 9 86" and having it displayed as "6 September, 1986". The only requirement is that you get the Day Month Year order right.

A date in a Validation Formula must conform to the Day Month Year order in the format for the system date as specified in the Set Date option.

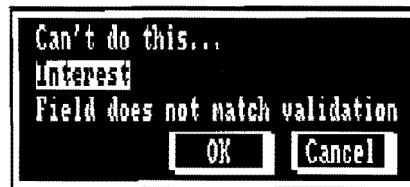
Entering Numbers

As with dates, Superbase uses the format specified for a numeric field in the File Definition as the basis for display. Superbase is very tolerant of spaces in your editing. You can enter, for example, "2 3 00.5" and have it neatly redisplayed as "\$ 2,300.50".

Superbase will not accept the comma as a number format character.

Entering Data into Validated Fields

If you have specified a validation check for a field, any data you enter must pass the check. If it does not, you will see this message:



If you can't remember what the rules for the field are, click on the Cancel button on the "Can't do this" requester, which comes up when you double click to save the record. This clears the field and stops the editing activity. You can now refer to the System Status File display, which shows Validation Formulas.

You may want to be able to skip over a field that has a validation check attached. If so, you must include a zero or null option in the Validation Formula when you specify it. There are examples of these in the section on setting up a Validation Formula.

Calculation Fields

Fields that have calculation formulas attached to them cannot be edited directly. You can only edit the component fields of a calculation field.

When you are adding data to a new record or editing an existing one, Superbase does not display the results of a calculation formula until you:

- * Click on the field, or
- * Cursor through the field, or
- * Go to save the record

Required Fields

If a field has Required status, you must enter some data into it. You can skip it with Return, but Superbase will catch an empty Required field when you go to save the record.

Stop Editing

If you move the pointer outside any of the fields and click the mouse, Superbase assumes you have finished editing and makes the cursor disappear.

If you double click the mouse, Superbase assumes you want to save the record. We discuss this in detail later on.

If you have made any changes to the current record, or added any data to a new record, Superbase does not let you perform any other action that involves selecting a record without asking whether you want to go ahead and save the record first.

RECORD NEW

Each record in a file has the same format, as set out in the File Definition, consisting of a number of fields of different types. If it helps, you can imagine each record as a card in a card index, or a form in a folder.

When you want to create a new record ("add a card to the box", or "add a form to the folder"), you have to follow a simple procedure:

1. Select New from the Record Menu.
2. Type data into the fields.
3. Save the record.

Before you can begin you must have a file open. If necessary, select Open File from the Project Menu.

Next, you must select the New option from the Record Menu.

Typing in Data

Superbase displays the field names for the current file. The example given below shows the screen you would get if you were entering a record into the Addresses file, which is on your program disk.

Superbase: Addresses indexed on Number

Number:

Title: Forename: Lastname:

Street:

City: Code:

Country:

Navigation icons: Stop, Previous, First, Previous, Next, Last, Play, Find, Help, Exit

Once you've decided where to start, you simply enter the data for each field in turn. If you've set up Validation Formulas, these can ensure that the data you enter is correct for each field.

If you make mistakes while typing in data, you can correct them using the Backspace and Delete keys together with the other editing controls explained above.

RECORD SAVE

Once your record is complete, you save it on disk using one of two methods. The first is by double clicking the left-hand button of the mouse, and the second is to use the Save option from the record menu. Either method will produce the Save Record requester.



This requester gives you two options. You can either click on the OK button, and save the record on the disk. Or you can click on the Cancel button. This leaves the data on screen, so you can do more editing if you need to.

If one of the file Indexes accepts unique entries only, and you try to save a record which would cause a duplicate entry, Superbase prevents you from going ahead. If you leave an Index field empty, Superbase still gives it a value, so you can't store more than one empty Index field in a unique Index.

RECORD EDIT

This section describes selecting the Record Menu Edit option. Remember that in Form or Record View you can start editing a record at any time just by clicking in any field.

You can only edit the current record. So you must first select the record you wish to edit.

You can do this in one of two ways:

- * Direct retrieval with the Key Lookup button.
- * Browsing in either Form or Table View, using the Current Record button to confirm that you have the right record.

Once you have selected a record for editing, select Edit from the Record Menu.

If Table View is set, Superbase switches to Form View with Paging on. If you are already in Record View or Form View, editing takes place in that View. Superbase positions the cursor in the first field on the screen. You can now edit the record using the techniques explained earlier.

When you've finished, save the record with either the double click or the menu method of bringing up the Save Record requester.

RECORD DUPLICATE

This option allows you to cut down on the time taken to enter records where some of the data is the same. You make a "snapshot" of the current record in memory, edit in any changes you want, and then save it in the normal way.

First select the record you wish to duplicate. Then select Duplicate from the Record Menu. Superbase informs you that a copy of the record has been created in memory.

Now edit the record as you wish. When you've finished, save the record with either the double click or the Record Save menu option.

RECORD REMOVE

From time to time you may find that a record is no longer needed. This menu option discards the current record.

Select the record you want to remove. Then select Remove from the Record Menu.

Superbase displays the Remove Record requester.



As you can see it is very similar to the Save Record requester. You have two choices: you can click on the OK button to remove the record, or you can click on the Cancel button to change your mind.

TWENTY MINUTE TUTORIAL

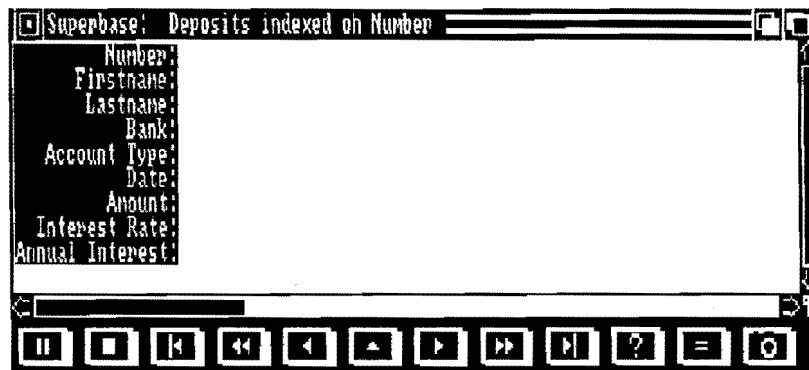
In this example you will use the Deposits file you created earlier to create, edit, duplicate and remove records.

Select Record View from the Set Menu for this exercise.

Opening a File

Next, open the Deposits file that you created in the last tutorial. By now you should be coming quite used to using the menus, so we won't go into detail. Select Open File from the Project Menu, and then select the Deposits file from the Open File requester. Do this now.

Once you have opened the file, you will be able to see the field names down the left-hand side, with no data on the right-hand side. This is because the file is empty.



Entering Data

Move the pointer to the menu bar and highlight the Record Menu. This is the menu you use when you are creating, editing, duplicating or removing records. The option to use when you are entering a record for the first time is New, which is the first option on the menu. Select New now.

If you look at the screen, you will see that Superbase is displaying the cursor in the first field of the record. The end of the field is shown by a vertical bar.

You are now going to enter your first record into a Superbase file. Here is an example record:

Number: ANN001
Forename: Jane
Lastname: Roxann
Bank: Harvard-Otterway
Account Type: Deposit
Date: 12 Jun 86
Amount: £1000.00
Interest Rate: 9.5

Start by entering the Number. When you've typed the example data, press Return. The cursor moves to the next field. You can then continue and type in the rest of the data. Remember to make sure you are entering the data against the correct field. Don't worry about making mistakes, as these can be corrected as you go along by using the Del or Backspace keys.

The screenshot shows a window titled "Superbase: Deposits indexed on Number". Inside the window, the following data is displayed in a list format:

- Number: ANN001
- Firstname: Jane
- Lastname: Roxann
- Bank: Harvard-Otterway
- Account Type: Deposit
- Date: 12 Jun 86
- Amount: 1000.00
- Interest Rate: 9.50
- Annual Interest: 95.00

At the bottom of the window is a toolbar with various navigation and editing icons, including arrows, a magnifying glass, and a question mark.

Now you can save the record. Use the simplest and most convenient method -- double click the left-hand button of the mouse. This produces the Save requester. Respond to it by clicking on the OK button. Superbase saves the record.

Done that? Right, let's type in another two records, for which the data is given below.

Number: SM1001
Forename: William
Lastname: Smith
Bank: Allied Irish
Account Type: Gold Plus
Date: 30 Jun 84
Amount: 100.00
Interest Rate: 9.50

Number: JON001
Forename: Peter
Lastname: Jones
Bank: First National
Account Type: Silver
Date: 28 Nov 85
Amount: 4000.00
Interest Rate: 9.75

You can enter these records in exactly the same way as you did before, but remember to look at each field as you type in the data, to make sure it's the right one. Remember also to save the first record before moving on to the second.

Editing a Record

Supposing you want to change some of the details in William Smith's record. How do you do it?

First of all you have to select William Smith's record. Use the Control Panel Next and Previous Record buttons until this record is on the screen.

Move the pointer and select Edit from the Record Menu. Superbase positions the cursor in the first field of the record.

Look at the record, and find the Date field. You are going to change this from "30 Jun 84" to "01 Jan 83". Use the

mouse to move the pointer into the Date field. Then click the left-hand mouse button once. This action produces a cursor in the field. Now use Control-X to remove the date that is already in this field. Type in "01 Jan 83" and press Return. That's it, you've now edited the record. Save it by double clicking on the left-hand button of the mouse, and then clicking on the OK button of the Save Record requester.

The example you've just worked through is an easy standard procedure for editing a record. You can also edit records in Form View, and of course there are many more editing features available to you, which are described at the beginning of this section on the Record Menu.

Duplicating a Record

If you want to create a new record that has very similar data to another, you can do so using a convenient short-cut, the Duplicate option. What you're going to do now is duplicate Jane Roxann's record and create a record for her sister. So select Jane Roxann's record using the Control Panel buttons. You should be able to do this without detailed guidance by now!

Now move the pointer onto the Record Menu and select the Duplicate option. Superbase displays a message to say that the record has been copied in memory, and you can now edit it.

You only need to change the information in three of the fields, these are Number, Forename and Amount. If you look at the screen you can see the cursor is already at the Number field. So use Control-X to delete the number that is already there. Now type in the new number, which is "ANN002". Once you've done that press Return to move the cursor to the next field, which is Forename. Again, use Control-X to delete the field contents, and type in the new name, which is "Candy". Now press Return until the cursor reaches the Amount field. Are you there? Right, now use Control-X, then type in 5000. Superbase redisplayes it as £5,000.00. That completes the editing for this record so you can now save it in the usual way.

Removing a Record

After you have been using Superbase for a while you may want to remove a record from your files. The procedure is straightforward, so let's run through it now. We'll remove Jane Roxann's record from the Deposits file. Select Jane Roxann's record as you did before.

To remove the record you have to select Remove from the Record Menu, so do this now. When you release the mouse, Superbase displays the Remove requester, asking you to confirm that this is the record you want to discard. Click on the OK button to proceed. Superbase returns to the Main Display showing the next record in the file. That's it, you've now removed the record.

If you want to remove groups of records, you should use the Process Remove option.

That concludes this short tutorial.

USING THE PROCESS MENU

The main database processing functions are contained in the Process Menu. It provides all the facilities for managing and manipulating your data, ranging from simple mailing label printing to complex multi-file queries and updates.

The Filter

All the Process menu functions make use of the Filter to determine which records are to be processed. The Filter concept is described in detail in Getting to Know Superbase, so you should refer to that section if you need to refresh your memory.

UPDATE

The Process Update option allows you to make changes to individual fields in your files. It is a multi-file option, like Query, and you can use records in one file to determine what happens to fields in another.

Since multi-file options are more complicated and more powerful than single file options, and since Update can by definition alter the data in your files, we recommend that you gain a good understanding of the Superbase system before starting to use the option. Also, you should be sure to make a backup of your data, using the CLI or a Workbench utility, before updating it.

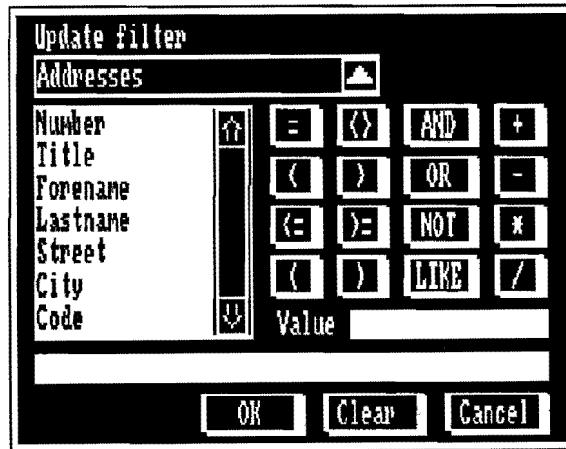
Update has two requesters: one is a Filter, similar to the Filter you have used from the Control Panel; and the other is a Fields requester, also similar to the Filter but with fewer selection buttons.

Prerequisite: Open Files

Update can use only the open files, so if you want to alter or refer to a field in the Update Command Lines you must first make sure the file that contains it is open. Use Project Open File to do this. Also, make sure you close any files that you are not going to need using Close File from the Project menu.

Selecting Update

Highlight the Process Menu and select Update. Superbase displays the Update Filter requester.

*Selecting File and Fields*

The Filter is like the Control Panel Filter, except that the File Name Box at the top of the requester has an upward pointing arrow at its right end. This arrow enables you to display the fields from all the open files in turn. Each time you click on it, the fields from the next open file are displayed in the Field Name Panel below. If you go on clicking, the list of files cycles back to its beginning.

Creating the Filter Command Line

This is done in the normal way, by clicking on field names and operators, and entering values in the Value Box. Superbase copies the results of your selections into the Main Box below.

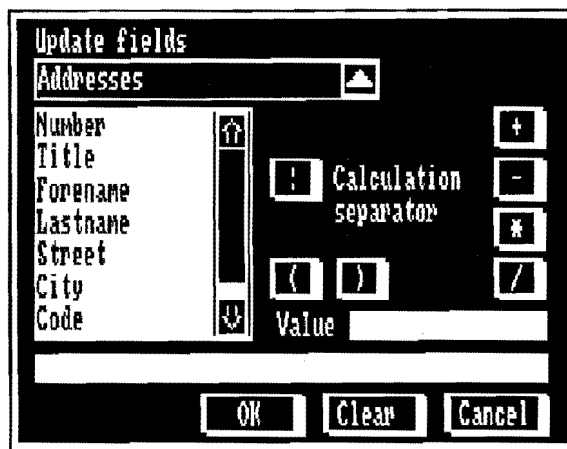
You can edit the Main Box, but since this increases the risk of errors, you should only do this when you have some experience of the system.

The Filter Command Line has a maximum length of 512 characters and can contain any combination of field names from the open files. However, when you are updating one file on the basis of the contents of another, you must specify a link between the files:

Cust Number.Customers = Cust Number.Invoices

This would ensure that the customer file will only be updated with values from the invoices file when the Cust Number field in a record in the Invoices file is EQUAL TO the Cust Number field in the Customers file. Of course in an example like this, you would probably include other conditions in the Filter Command Line to limit the updating by date or some other factor.

When you have created the Filter you want, click on OK. Superbase then displays the Update Fields requester.



The Update Fields Requester

In this requester, you specify the precise updating actions you want Superbase to perform on certain fields. Typical updating requirements might be:

- * Setting a numeric field to zero.
- * Adding transaction amounts to balances.
- * Setting a status indicator field to a new value.

Each updating action is defined the same way. An example:

Status = "Y"

This sets the Status field to the value "Y", Irrespective of its previous value. Another example:

Balance = Balance + Amount

Here the Balance field is mentioned twice. This has the effect of adding the Amount field to the Balance, instead of replacing the old value of Balance with the new value of Amount. The third example increases the Amount field by ten percent:

Amount = Amount * 1.1

Creating the Update Fields Command Line

You start by clicking on a field name. Superbase copies it into the Main Box, and automatically adds an EQUALS sign operator. Next you click on another field name, or in the Value Box, where you type in the value you want, remembering to press Return as you finish. The maximum length of the Update Fields Command Line is 512 characters.

Using the Colon Separator

Each time you enter an update expression, you must set it off from the previous one by clicking on the Colon button. This inserts a colon in the Command Line. If the examples above were all in one line, they would be separated like this:

Status = "Y" : Balance = Balance + Amount : Amount =
Amount * 1.1

Completing the Update Fields Requester

Click on OK to finish the Command Line and initiate the Update processing, or click on Cancel and Clear to stop the process.

QUERY: THE HEART OF SUPERBASE

The Query function is the most sophisticated of Superbase's menu options. It allows you to produce formatted output from one or more files, with a great degree of control over both the selection and the presentation of record data.

You can select from a wide range of Report features for the Query. You can specify a title to appear on each page. You can request totalling, subtotalling, averages, and counts for any field. Groups of fields can be repeated, and you can choose which fields are to appear on each line.

The Filter, which you have encountered in many other Superbase functions, is also a part of the Query. The main difference is that the Query Filter allows you to include fields from more than one file in the Filter Command Line.

Query output can be sorted into any order. You can include several fields in the Order part of the Query, to create reports with many levels of grouping and subtotalling. Any sort field can be either ascending or descending.

Finally, the output from a Query can be directed to one of four possible destinations. The Screen, the Printer, a formatted ASCII disk file, or a new database file.

Prerequisite: Open and Close Files

The Query function uses the set of open files, so you need to decide which files you want to include, before you select Query from the menu.

You can quickly check which files are open with System Status System. If necessary, close any files which are not needed, and open any which are, using the Open File and Close File options on the Project menu to do this.

Prerequisite: Open Fields

You can output either the open fields for the current file or a set chosen just for the Query.

If you want to use the currently open fields you must select the set you want before you select Query. Use Project Open File and Project Open Fields to do this.

Selecting the Query Option

Highlight the Process Menu and select Query. Superbase displays the Query Definition requester.

The screenshot shows a dialog box titled "Query definition". It has a "Title" label followed by a text entry box, a "Date" label followed by a date selector box, and a "Page" label followed by a page number selector box. Below these are four buttons: "Fields", "Report", "Filter", and "Order", each followed by a horizontal line for input. At the bottom of the dialog are five buttons: "Print", "Disk", "File", "OK", "Clear", and "Cancel".

Query Definition Requester

The requester has three parts. At the top is the Title Box, below this is the Query Command Panel, and at bottom left you will see three buttons for selecting the destination for the output from the query.

Query Definition works by accepting your selections and typed input through four requesters linked to the Fields, Report, Filter and Order buttons next to the Query Command Panel. Superbase then searches the file or files and outputs any records that match your Filter values.

Title Box

The Title Box has three parts: Date Selector, Text Entry Box, and Page Number Selector. If you make any selections or enter any text, Superbase will print the results as a Title at the head of each page or screen of the query output, followed by a blank line. If you don't use the

Title Box at all, Superbase starts the query output at the top of the page.

If you click on the Date Selector, the Title will include the system date, as shown in the Date Format requester on the Set menu. The date is always aligned with the left margin. Superbase highlights the Date Selector when it's active.

To enter the text you want for the query output title, click in the box between the Date and Page Number Selectors, and start typing. Superbase automatically centres the text in the box as you type. The maximum length is 80 characters.

If you click on the Page Number Selector, the Title will include a page number. The page number starts at one and increases by one every time it's printed. The page number is always aligned with the right margin. Superbase highlights the Page Number Selector when it's active.

The margins and page length for the query output are set from the Preferences system utility.

Query Command Panel

The four lines of the Query Command Panel do most of the work of the Query option. Each line defines one of the elements of a query: output fields, report features, filter conditions and sorting order. The maximum length of the Query Command Line for Fields, Report and Filter is 512 characters.

When you open a previously saved query from the Project Menu, Superbase copies its details into these four lines. You can then click on OK to use it, or edit any of the lines directly.

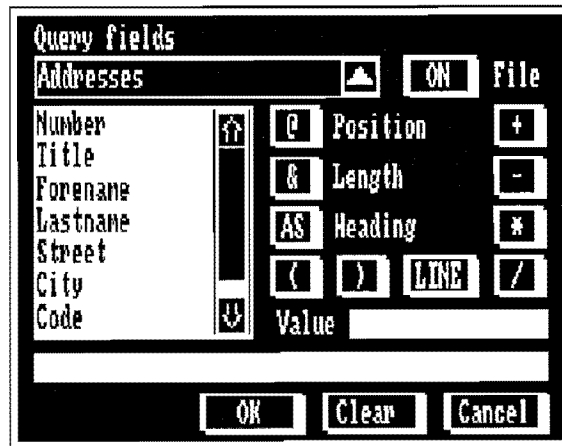
You do not have to use all four lines. For example, to produce a sorted report that prints just the open fields for all the records in the current file, you would only use the Order line to specify the fields to sort on.

Fields

If you want to output just the open fields for the current file, leave this line blank. Don't click on the Fields button; go on to the next section.

If you do want to select a set of fields for the query output from the open files, click on the Fields button. Superbase displays the Query Fields requester.

If you want to output the Open Fields List as well as those fields you select using the Fields button, type "*" at the beginning of the Filter Command Line.



The Query Fields requester resembles the Filter requester, but has several important differences. Its purpose is to allow you to select fields from any of the files being used in the query, and apply certain operators and parameters to them. Before looking at these you should understand how to select a file.

Selecting File and Fields

At the top of the requester is the File Name Box, containing the name of the first open file. The fields in the Field Name Panel below belong to this file. You can select any field by clicking on it in the usual way.

If you want to select a field belonging to another open file, you must first click on the upward pointing arrow to the right of the File Name Box. This action selects the next open file, and displays its name and the field names that belong to it. You can cycle through all the open files by repeated clicking on the arrow.

Superbase checks to see whether a field name is unique

across all the open files. If it is not, Superbase appends the file name automatically: Lastname.Addresses.

For simple queries, you just click on the field names you want, and then on OK. But if you want to add features to your query output you must use the special operators and options to the right of the Field Name Panel.

Derived Columns

A derived column in the query output is one in which the data is generated from a calculation, usually involving an existing field or fields, one or more arithmetic operators, and numeric variables. Examples are:

Multiplication of fields: Quantity * Price
Fixed decimal places (no rounding): FIX(amount/3,2)
Percentage Increase of 15%: Price * 1.15
Percentage decrease of 8%: Price * .92
Future date: Date + 30
Margin: Sales - (Cost + Commission)

The usual set of arithmetic operators is available. To set up a derived column, click on each of the elements of the calculation in turn, except for actual values, which you should type into the Value Box, pressing Return to enter them.

A derived column that produces a numeric result is output in the default numeric format, which is specified with the Number Format option on the Set menu.

Likewise, a derived date column is output according to the format specified with Date Format on the Set menu.

The data in a derived text column is output at its actual length, which means that following fields will not be regularly positioned unless you specify a fixed length for the derived text or a fixed column position for the next column.

AS Heading

When you specify a field as part of the query output, Superbase normally prints its name at the head of its column on each page. But this is not possible for a

derived column, which has no name of its own. Consequently, Superbase allows you to enter a piece of text as a special heading. This can be done for both derived and normal columns.

After specifying the field or calculation, click on the button for AS Heading then type the heading you require into the Value Box and press Return. AS will stay highlighted until you press Return. Examples:

Sales - (Cost + Commission) AS "Margin"
Lastname AS "Name"

You may enter any piece of text. Positioning is done with the @ Position option. If you're using Query to create a new database, you must make sure that the headings for any derived columns are valid field names -- legal characters only and not more than 15 characters in length.

@ Position

If you don't specify column positions for the fields, Superbase will output the field data for each record in a line, with each field appearing right after the previous one. Control over the exact positioning of data is obtained by clicking on the button for @ Position, and entering the desired column in the Value Box. You do this before clicking on the field name.

For example, to print Lastname at column 12, you click on @ Position, then in the Value Box, where you type in "12" (no quotation marks), and press Return. Then you click on Lastname. Superbase shows this in the Main Box as:

@12 Lastname

We suggest that you try out column positions on screen and then adjust them before starting a lengthy report.

Overlapping fields can cause problems. Typically, this occurs when you tell Superbase to print a field at a column position which has already been used by the preceding field's trailing spaces. Superbase's response in this situation is to print the field at the correct column position on the next line (see & Length, below).

The maximum column position is 255. Output is forced to the next line if required by Preferences margin settings.

& Length

The solution to the problem of overlapping fields on a line is to limit the number of characters output for each field. You do this by clicking on the button for & Length, and then entering the desired number of characters in the Value Box. You do this before clicking on the field name.

For example, to set a length of 12 for Lastname, click on & Length, then click in the Value Box, where you type 12 and press Return. Then click on Lastname. Superbase shows this in the Main box as:

&12 Lastname

If you want to output two fields with just a space in between, you must use the following technique:

&20 Forename + " " + Lastname AS "Name"

This prints the actual length of Forename, and ensures that the next column will be properly aligned. Notice that as this is a derived text column a separate heading is specified.

New Lines

You can start a new line in the output at any point by clicking on the LINE button. Superbase places NEWLINE symbol in the Main Box.

If you want a blank line in the output you may need to click on LINE twice, depending on the actual print position.

ON File

Superbase is a relational system. This means that you should find it easy to store data in separate files and create relationships between them using this Query function. In order to see this, import "deposits import" into the Deposits file, and open the Addresses File. These two files can be related to each other, so you can output details from both files using the Lastname field as a link. The link is set up in the Query Filter requester, which is explained later.

Outputting data from more than one file raises a special problem of formatting. The ON File option is designed to solve it. The following example is only intended as an illustration of the technique. A typical query output using the Addresses file and a Deposits file with several deposits for each person might have a Fields line like this:

Lastname.Addresses, Street.Addresses, Date.Deposits, Amount.Deposits

This line would produce a report like this:

Hansen	7 Worregarde	12 May 1984	12,000
Hansen	7 Worregarde	6 Jun 1985	2,200
Hansen	7 Worregarde	23 Sep 1985	750
Hansen	7 Worregarde	24 Oct 1986	1,000
Foster	439 Oulette Ave	8 Jan 1983	450
Foster	439 Oulette Ave	28 Apr 1984	9,000
Foster	439 Oulette Ave	14 Feb 1985	600

Too much data is repeated. What is needed is a way of telling Superbase which details to print for each file. ON File does exactly that.

When you click on ON File, Superbase copies the name of the file that's in the File Name Box into the Main Box. Now, all the field names that come after the file name will be printed only when a record from that file is printed, until you place another file name in the line. The Fields line would look like this:

ON "Addresses" Lastname.Addresses, Street.Addresses, ON "Deposits" @27 Date.Deposits, Amount.Deposits

The report would look like this:

Hansen	7 Worregarde	12 May 1984	12,000
		6 Jun 1985	2,200
		23 Sep 1985	750
		24 Oct 1986	1,000
Foster	439 Oulette Ave	8 Jan 1983	450
		28 Apr 1984	9,000
		14 Feb 1985	600

Superbase only prints the name and address when it reads a

record from the Addresses file, and only prints the date and amount when it reads a record from the Deposits file.

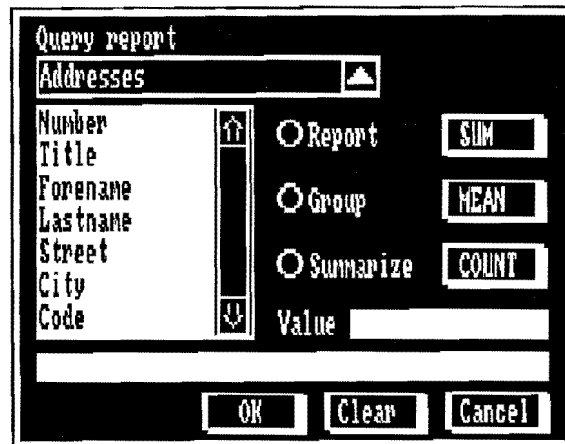
The effect of this feature resembles a "suppression of duplicate names" feature, but you should note that it can only work when the data for each "level" of the report is held in separate files.

If you actually want to see the data repeated as in the first example, don't use the ON File feature.

QUERY REPORT

Superbase allows you to specify features such as totalling for the output fields in a query. If you don't want any features of this kind you should leave this line blank, avoid clicking on the Report button, and skip to the next section.

If you do want some report features in your query output, click on the Report button. Superbase displays the Query Report requester.



The Query report requester, like many others, has three main parts. To the left is a Field Name Panel, with a File Name Box above it. On the right is a set of buttons for

making selections, and the Value Box. Below these is the Main Box into which Superbase copies the results of your selections.

Field Groups

This is a key concept. A report consists of a series of records, which may be divided into groups according to the sorting order you set. For example, in a file such as our demonstration Addresses file, all the address records for each country may be printed together, and all the records for each city may be printed together -- a Country group and a City group. The City groups would appear within the Country groups:

```
England
      London
      London
      London
      York
West Germany
      Bonn
      Bonn
      Heidelberg
```

A Field Group is defined by a change in the content of the field. The change from Bonn to Heidelberg defines a City group, and the change from England to West Germany defines a Country group. Note that the change in the Country group necessarily implies a change in the City group: West Germany terminates both York and England.

In this example, we would say that the file was Ordered or Sorted by City within Country. Now, if the file also had numeric or financial data, it would be very useful to be able to generate a subtotal for each Country and City group. Averages and record counts for each group would also be interesting. And we would like to see figures for the overall totals, averages, and counts as well.

The Report requester allows you to specify these features for both the report as a whole and any group within it by clicking on the keyword buttons and entering field names.

Summarize The Report will suppress all record data and only output information from the following functions.

- Report** When this button is highlighted, the selections that you make will apply to the report as a whole, not just to a group within the report.
- Group** When this button is highlighted, the selections that you make will apply to one Field Group within the report.
- Sum** The fields that follow the keyword will be totalled or subtotalled depending on whether Report or Group is selected.
- Mean** The fields that follow the keyword will be averaged or sub-averaged depending on whether Report or Group is selected.
- Count** The records in either the whole report or a group will be counted or sub-counted depending on whether Report or Group is selected.

Superbase prints the totals and means for each specified field in the column for that field, aligned with the field's numeric format (see also Overflow in Subtotals or Totals, below). Counts are printed once for each group in the leftmost column.

REPORT EXAMPLE

This example illustrates all the Report features we have mentioned. However, it is not a tutorial, and you should not attempt to make it work with the demonstration files as they are released on the program disk.

Suppose you want a report from an Addresses file that has been modified to include two fields for holding financial data: Balance and Outstanding. You want to see full information, including record counts and averages as well as subtotals, for every City and Country Field Group. This would be the procedure to follow, starting with the requirements for the report as a whole.

Report Totals, Averages, and Record Counts

1. Click on Report. This tells Superbase that the selections you are going to make will apply to the report as a whole.
2. Click on Sum. This indicates that the fields you are going to select are to be totalled for the report as a whole.
3. Click on a numeric field in the Field Name Panel. Superbase copies the name into the Main Box after the keywords. Repeat this action for all the fields you wish to have overall totals for. If you selected Balance and Outstanding, the Report Command Line so far would be:

REPORT SUM Balance, Outstanding

4. Now click on Mean. This indicates that the fields you are going to select are to be averaged for the report as a whole.
5. As for Sum, click on a numeric field in the Field Name Panel. Superbase copies the name into the Main Box after the keywords. Repeat this action for all the fields you wish to have averages for. If you selected the same two fields, the Line would now be:

REPORT SUM Balance, Outstanding MEAN Balance, Outstanding

6. Record counting. This feature is either on or off. If you want the records to be counted and the total printed at the end of the report, use this option. Click on Count. Superbase copies the keyword into the Main Box:

REPORT SUM Balance, Outstanding MEAN Balance, Outstanding COUNT

It's important to realize that the order of your actions is important here. By clicking at random on operators and field names, you could produce a meaningless Report Command Line. This won't harm your data, and it's the price you pay for complete flexibility, but you should try to avoid it nevertheless. A line like this doesn't help anyone:

SUM MEAN Balance, Lastname, COUNT REPORT MEAN City

Superbase will either give you a "Can't do this" message if there's an error in the line (such as trying to sum a text field), or print meaningless data. So proceed carefully.

Group Totals, Averages, and Record Counts

Now we come to the business of specifying report features for the different groups within the report. The procedure is very similar to that for the report as a whole.

1. Click on Group, and then on a single field name.
Superbase applies the selections you make next to the named group only. If you selected Country, the Report Command Line would look like this:

GROUP Country

The field that defines the Group should also be part of the Query Order Command Line. Most often it's a text field, but if your report groups its records by date or number then you could obtain meaningful subtotals from a date or numeric field. The only fields you should not use as Group fields are those that change their values from record to record, such as most financial items.

2. Click on Sum. This indicates that the fields you are going to select are to be totalled for the group -- in other words they will be subtotals.
3. Click on a numeric field in the Field Name Panel.
Superbase copies the name into the Main Box. Repeat this action for all the fields you wish to have sub-totalled for the group. If you selected Balance and Outstanding, the Line so far would be:

GROUP Country SUM Balance, Outstanding

4. Now click on Mean. This indicates that the fields you are going to select are to be averaged for the group.
5. As for Sum, click on a numeric field in the Field Name Panel. Superbase copies the name into the Main Box after the keywords. Repeat this action for all the fields you wish to have group averages for. If you selected the same two fields, the Line would now be:

GROUP Country SUM Balance, Outstanding MEAN Balance, Outstanding

6. As for the report as a whole, the record counting function is either on or off. By definition it counts only the the number of records in the group. Click on Count, and Superbase copies the keyword into the Main Box.

GROUP Country SUM Balance, Outstanding MEAN Balance,
Outstanding COUNT

Let's suppose that you had set up a full Report Command Line for an Addresses file that had the numeric fields Balance and Outstanding. The Report Command Line would look like this:

REPORT SUM Balance, Outstanding MEAN Balance, Outstanding
COUNT:

GROUP Country SUM Balance, Outstanding MEAN Balance,
Outstanding COUNT:

GROUP City SUM Balance, Outstanding MEAN Balance,
Outstanding COUNT

It looks lengthy, but when you read it through it's quite easy to understand what's going on.

Field Group Order Rule

Remember that we said earlier that the City group can be described as being within the Country group? This makes the Country group the outer group, and as you can see above, it comes before City in the Command Line. The order from outer to inner must be reflected in the way you build up the Command Line, or Superbase will be unable to keep track of the subtotals. The Rule is:

Specify field groups from the outer level inwards.

Process Query

Working with Superbase

Example Output

The output from a Command Line like the one above would look like this:

England	London	230	100
England	London	450	250
England	London	1200	300
		-----	-----
		1880	650
		626.67	216.67
Group count 3 in London			
England	York	300	75
		-----	-----
		300	75
		300	75
Group count 1 in York			
		-----	-----
		2180	725
		545	181.25
Group count 4 in England			
West Germany	Bonn	6000	1450
West Germany	Bonn	750	50
		-----	-----
		6750	1500
		3375	750
Group count 2 in Bonn			
West Germany	Heidelberg	995	995
		-----	-----
		995	995
		995	995
Group count 1 in Heidelberg			
		-----	-----
		7745	2495
		2581.67	831.67
Group count 3 in West Germany			
		=====	=====
		9925	3220
		4962.50	1610
Report count: 7			
		=====	=====

Summary Reports

You can obtain a report that suppresses the main detail of the query output and prints just the summary information. Click on the Summarize button to activate this feature. If you wanted a summary report based on the one above, but without the mean information, the Report Command Line would be:

SUMMARIZE: REPORT SUM Balance, Outstanding COUNT: GROUP Country SUM Balance, Outstanding COUNT: GROUP City SUM Balance, Outstanding COUNT

The report output would be:

	-----	-----
Group count 3 in London	1880	650
	-----	-----
Group count 1 in York	300	75
	-----	-----
Group count 4 in England	2180	725
	-----	-----
Group count 2 in Bonn	6750	1500
	-----	-----
Group count 1 in Heidelberg	995	995
	-----	-----
Group count 3 in West Germany	7745	2495
	=====	=====
Report count: 7	9925	3220
	=====	=====

Derived Columns

If you want to apply report features to derived columns, you can. However, you must refer to the derived column expression by the name you gave it with the AS Heading feature in the Query Fields requester.

For example, the Query Report Command Line for subtotaling a derived column where the original expression was

Balance * 0.15 and the AS Heading text was "15%" would be:

GROUP Country SUM Balance,Outstanding,"15%"

You would enter "15%" into the Value Box in the usual way. Obviously you must ensure that each item of AS Heading text is unique, or Superbase may confuse one expression with another.

Overflow in Subtotals or Totals

Every time you request totals for a numeric field, you run the risk of creating a format overflow. Suppose you had a numeric field with a format "999.00", defined at this length because the field itself can never exceed 999 in value. If the total were to run into four figures, as it would if even just 10 records had the value of 100 in this example, the format would not be able to handle it, and Superbase would print or display number signs:

.

To prevent this happening, you must adjust the field format in the File Definition. Select Project Edit, select the field to be adjusted, and click on the Numeric button. Then increase the length of the format by clicking on the upper left arrow on the Number Format Panel. Exit from the Number format requester, then from the File Definition requester, both times by clicking on OK. Then select Cancel on the Save File Definition requester.

Now Superbase will use the expanded numeric format for the all the numbers in the column, as well as subtotals and totals.

You may prefer to make such changes permanent, by saving the File Definition with the expanded format.

Totals for Non-Printing Fields

You may request totals for fields that do not appear in the Query Fields Command Line. Superbase prints such totals without a column heading after any totals for fields that are being printed.

QUERY FILTER

The Filter button calls up a requester very similar to the Filter requesters used in the other functions on the Process menu.

If you don't want to restrict the records selected for the query output, leave this line blank.

If you're leaving the Filter line blank, don't click on the Filter button, and go on to the next section. If you want to set up a Filter, click on the Filter button. Superbase displays the Query Filter requester.

The Query Filter is very similar to the Filter that you're familiar with from the Control Panel. However, this Filter allows you to select fields from any of the open files being used in the Query. Above the Field Name Panel is the File Name Box containing the name of one of these files. The field names in the Panel belong to the file whose name appears in the box. If you want to see the fields for the next open file, click on the upward pointing arrow to the right of the File Name Box.

Apart from this difference, the Query Filter works exactly like other filters. You click on a field name, then on an operator, then in the Value Box or on another field name. (Remember to press Return after you've entered a value in the Value Box.) Superbase builds up the Filter Command Line in the Main Box as you make selections and enter values.

RELATIONAL QUERIES

If you're new to databases, or you have no intention of finding out how Superbase handles multiple files, you may wish to skip this section. It's intended for those users who want to explore the possibilities of linking files together to form a sophisticated database system.

File Design

Although the design of the individual files that

constitute a database is a very important topic, this Guide cannot take the place of either textbooks on how to structure a database or experience. You may not need or want the former, but you are going to have to gain the latter. We shall spend no time at all on the theory of databases.

In your case, as in every case, a database meets the needs of a particular application. This makes it difficult to give much general advice beyond a few basic points:

- * Keep record and index key sizes small.
- * In each file that is to form part of a multi-file query, set up a field to be used for linking across files. The field names do not have to be the same.
- * Place an identifier such as a record or customer number in this field. For every pair of files to be linked, there must be identifiers that are the same in both files, yet unique within each.
- * Index files on all identifier fields used for linking.
- * Base transactional records such as invoice line data on a single transaction -- no repeating fields.

Query Filter Command Line Rules

Creating an efficient Query Filter is something you have to learn. Even sophisticated users of mainframe databases often find that the results of their first attempts at a query are not exactly what they want. It's important to have a realistic level of expectation, to avoid frustration. Realize that the process of experimentation and feedback is normal.

A query is multi-file when fields from more than one file are named in the Query Fields Command Line. For a multi-file query to work, you must specify links between the files. A link is known as a "join" in the jargon. A join takes the form of two fields joined by an EQUALS operator: Custref.Invoices = Custnumber.Addresses. You can have joins between more than one pair of files, and a file or field may appear more than once in the series of joins.

Although Superbase, true to its philosophy, allows you to create a Query Filter in almost any form, only certain techniques will work properly. To make this clear, we have come up with six important rules for building up Query Filter Command Lines:

Rule One. When linking any two files, there must be a link between them in the form of record identifiers that are the same in both:
Custref.Invoices = Custnumber.Addresses

Rule Two. Do not use OR expressions when linking across files: Custref.Invoices = Custnumber.Addresses OR Custref.Invoices = Custname.Addresses. This is horrible!

Rule Three. Use only the EQUALS operator when linking between files.

Rule Four. Place all expressions that link across files at the start of the Filter Command Line.

Rule Five. Later in the Command Line, if you want to use an OR expression, enclose it within parentheses: (City = "London" OR City = "New York")

Rule Six. Sequence all filter expressions in an order from most precise to least precise. For example:

Custnumber = Custref AND Country LIKE "England" AND Balance > 1000 AND (Name LIKE "smith" OR Name LIKE "jones")

The join comes first, followed by a string match on "England", which is a single value -- quite precise. Then comes a GREATER THAN expression -- less precise, as many values can be greater than 1000. OR expressions, whatever the degree of precision involved, always come last, inside parentheses.

Learn to see a Query Filter Command Line as a series of operator-based expressions separated by AND operators.

Caution. You must follow these rules. If you don't, you could end up with queries that produce enormously repetitive and meaningless results, and take a very long time to do so.

If you want to interrupt a Query, click on Stop. The process will only halt on retrieval of data that matches the selection criteria.

QUERY ORDER

The Order button allows you to specify a sorted order for the query output. If you don't specify any order, Superbase will present the records in the order in which it finds them on the disk. Most probably, they will not be in any alphabetic or indexed order. As this is the fastest way of retrieving information from the disk, you may want to use it in certain situations where the order of presentation does not matter. And if you're creating a new database you should definitely avoid specifying an order, to speed up the processing. However, in the majority of cases, you'll want to see the records ordered, especially when:

- * Indexed order, such as date order, is an important part of the file.
- * You have set up subtotals on the Report line.

If you don't want to specify any order, don't click on the Order button. Skip to the next section to complete the Query Definition.

If you do want to add order features to the query, click on the Order button; Superbase displays the Query Order requester.

The Query Order Requester

This requester allows you to select fields for sorting from any file, specifying whether each one is to be sorted in ascending or descending order.

You can select fields from any of the open files being used in the Query. Above the Field Name Panel is the File Name Box containing the name of one of these files. The field names in the Panel belong to the file whose name appears in the box. If you want to see the fields for the next open file, click on the upward pointing arrow to the right of the File Name Box.

To the right of the Field Name Panel are the buttons for the Ascending and Descending options. The procedure is quite simple:

1. Click on a field name.
2. Click on either Ascending or Descending.
3. Repeat with other fields if necessary.

The default length for sorting is 15 characters per field. Superbase gives equal weighting to upper case, lower case and accented instances of a character.

Caution. You will need to have at least 15k of free memory before you can use Query Order.

When you're finished, click on OK to return to the main Query Definition requester. Superbase copies your selections into the Order line.

Single and Multiple File Sorting

Outputting records from a single file is comparatively easy, and Superbase performs the operation without affecting the file itself. If you specified an order using just a single index, Superbase outputs the data as it finds it. But if your Order request includes several fields, you may have to wait a while for Superbase to create temporary files prior to producing the query output.

The temporary files are identified by the names "superbase.tmp" and "superbase.srt".

However, if you are using more than one file, Superbase has to do quite a lot more work. Although the amount of extra work varies depending on the precise Order request you set up, essentially it means that Superbase can't tell what the final order is to be until it's finished reading all the files. Superbase may then create a temporary file which is used in the output phase. When this is done, Superbase switches to an output phase, and produces the results you want.

QUERY OUTPUT DESTINATION

You select the destination for the query output by clicking on the appropriate button.

OK Always directs output to the Screen.

Print Always directs output to the Printer.

Disk

This selection creates an ASCII disk file containing the query output. The output is formatted as if it were being printed, so provided the file is not too large for your word processor, you may be able to load and edit it like an ordinary text file.

The new database is indexed on the first indexed field in the output, or if there are no indexed fields, on the first field in the output.

Superbase ignores any formatting or reporting elements in the query.

Derived items are treated as new fields, but you must ensure that the text set with Heading is valid as a field name.

Once you've selected your output destination you must click on OK to initiate the Query output. The Disk and File options require you to enter a name for the file you're about to create.

PROCESS REMOVE

This option discards a set of records or all the records from a file. It uses a Filter, allowing you to specify the conditions under which a record is to be removed.

Single records should be disposed of with the Remove option on the Record menu.

Using Process Remove

Select Remove from the Process Menu. Superbase displays the Remove Records Filter requester.

Remove records filter

Addresses

Title ↑ = <> AND +
Forename ↓ < > OR -
Lastname <= >= NOT *
Street { } LIKE /
City
Code
Country ↔ Value

Country LIKE "England"

OK Clear Cancel

The requester is the same as the normal Filter requester. See Getting to Know Superbase, pages I-19 to I-27, for a detailed explanation of how Filters work.

Example 1: Removing Selected Records

In this example we'll use the Addresses file, so make it the current file if you haven't already done so. Then select Process Remove.

Your objective is to remove from the file all the

addresses where the Country field has the value "England". Click on Country. Superbase copies the field name into the Main Box. Now click on the LIKE operator. Then click in the Value Box, and type "England" (omit quotation marks). Press Return. Your Filter Command Line should read:

Country LIKE "England"

If it doesn't then click on the Clear button to clear the Filter, and start again. (If you click on Cancel it will have the same effect, but Superbase will assume you've finished with the Filter and remove the requester from the screen.) When you've got the Filter Command Line right, click on OK.

Superbase now checks the Filter Command Line to see whether there are any errors in it. If you've entered the example correctly there shouldn't be any.

Next comes a confirmation request, as Superbase does not allow records to be removed with a single action. Click on OK to go ahead, Cancel to abandon the action.

Provided you click on OK, Superbase processes the file using the Filter. Superbase automatically removes all the records that match the Filter. The Filter Command Line is then cleared out, and Superbase returns to the Main Display.

Example 2: Removing All Records

We'll explain how to do this, but don't actually go through the steps yourself unless you're sure you want to discard all the records in the current file.

1. Select Process Remove.
2. When the Remove Records Filter appears, click on OK.
3. When the Confirmation requester appears, click on OK.

Superbase will remove all the records in the file by initializing the file.

PROCESS IMPORT

This function creates new records in a Superbase database file by reading in data from an ASCII disk file. If your spreadsheet, communications package, or other application is capable of producing an ASCII file on disk, then that file can be loaded into Superbase to give you all the management advantages of the database. Likewise, an ASCII file produced by exporting from one Superbase file can be imported into another Superbase file.

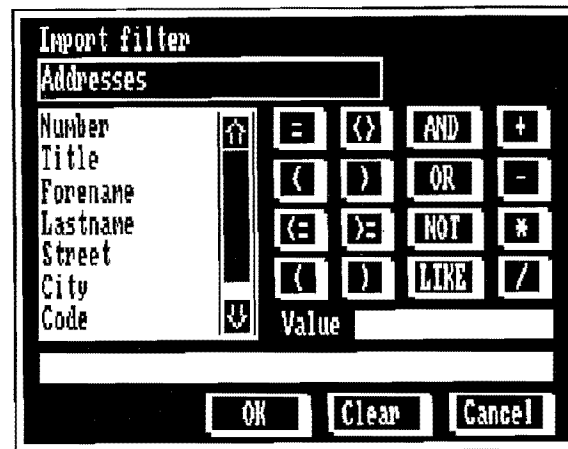
In Import and Export operations, the items of data (fields) in the ASCII file are separated by a special character, so that Superbase can tell where each one ends. Likewise, each record is also followed by a special separator character. The default settings for the field and record separators are respectively the comma and the carriage return. However, if the file to be imported uses other characters, you can instruct Superbase to use them through the Set Options requester.

You cannot use Import to move data directly from one Superbase file into another. If you want to do this, use the Query function to output data into a new file.

Import uses a Filter to determine which records in the ASCII file will be accepted into the Superbase file. You can import data into a limited set of fields in each record if you open the required set of fields before you do the Import.

Using Process Import

Select Import from the Process Menu. Superbase displays the Import Filter.



The requester is the same as the normal Filter requester. See *Getting to Know Superbase*, pages I-19 to I-27, for a detailed explanation of how Filters work.

Build up your Filter Command Line in the normal way. When you click on OK, Superbase displays the Import File Name requester. Enter the name of the ASCII file from which the data is to be imported.

Even though the Filter operates in the same way for Import as for the other Filters, there are a few important extra considerations:

- * The file into which the data is to be imported is always the current file.
- * The fields into which data is to be imported must be of the correct type: a numeric field for numbers, a date field for dates, etc.
- * If an imported item of data is too long for its field, Superbase will inform you. You may either continue, in which case the error is overlooked and truncated data is stored in the imported record, or stop the Import and use Project Edit to extend the length of the field.
- * If you are importing into just the set of open fields,

Superbase will create records with the other fields left blank. Index entries for such fields will be made, but they too will be blank. Note that a unique index cannot allow more than one blank entry.

- * Superbase will signal an error if Import tries to store a blank field that has Required status. Remove such status temporarily with Project Edit.
- * Validation checks will be made on all fields in records created by Import, whether they are being imported into or not. Again, you may need to temporarily remove Validations using Project Edit.

PROCESS EXPORT

Export creates an ASCII file on disk as a copy of the data from selected records and fields in a Superbase file.

You may have an application that can accept ASCII files. Word processor mailing packages, spreadsheets, and communications packages often can. Also, an ASCII file can be imported into another Superbase file.

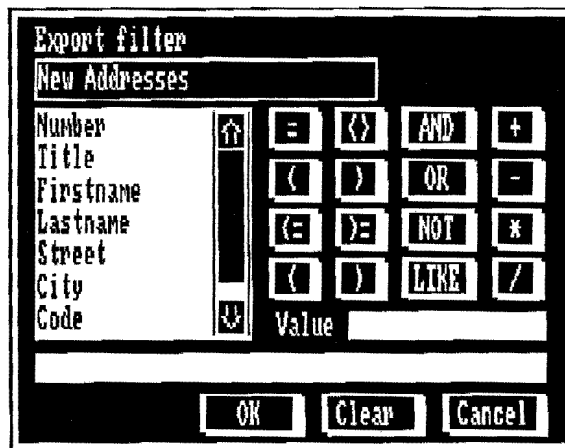
You can set up your own field and record separator characters in the Set Options requester, and specify whether quotation marks should be placed around the exported fields (this is necessary if the data contains the character used as a field separator; for example, addresses, dates or numbers may contain commas.)

You cannot use Export to move data directly from one Superbase file into another. If you want to do this, use the Query function. Export can only process a single file, so if you need to Export data from more than one file, you should use Query first to combine the data into one new file.

Export uses a Filter to determine which records from the Superbase file will be copied to the ASCII file.

Using Process Export

Select Export from the Process Menu. Superbase displays the Export Filter.



The requester is the same as the normal Filter requester. See Getting to Know Superbase, pages 1-19 to 1-27, for a detailed explanation of how Filters work.

Build up your Filter Command Line in the normal way. When you click on OK, Superbase displays the Export File Name requester. Enter the name you want to give to the ASCII disk file. We suggest that you adopt a convention for naming Export Files, such as ending each name with the extension ".exp".

Superbase then processes the database file, checking each record to see whether it matches the conditions set up in the Filter. If it does, Superbase creates a copy of the data in the currently open fields and adds it to the Export File.

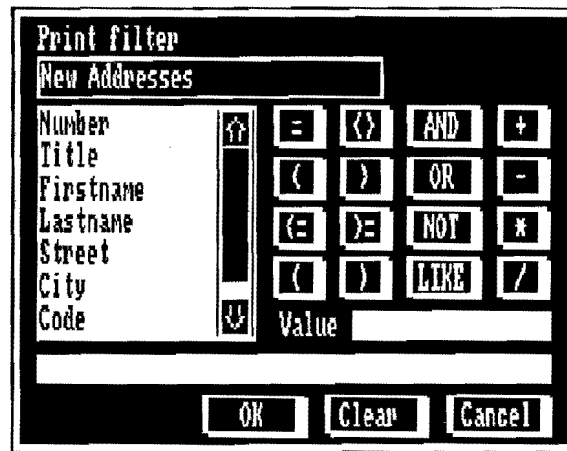
PROCESS PRINT

The Print option provides a quick and easy way of obtaining a printout from the current file.

The function outputs the currently open fields in the column format set for Table View. It uses a standard Filter.

Using Process Print

Select Print from the Process Menu. Superbase displays the Print Filter.



The requester is the same as the normal Filter requester. See Getting to Know Superbase, pages 1-19 to 1-27, for a detailed explanation of how Filters work.

Build up your Filter Command Line and click on OK. Superbase prints out the records that match the Filter. Certain print formatting conventions are observed:

- * The field names appear as column headings, separated from the first line of data by a blank line, on each page.

- * Superbase takes the page length and margin settings from the Workbench Preferences system utility. If the data exceeds the right margin, Superbase prints it on the next line.
- * Superbase prints a form feed six lines before the end of each page.
- * If Preferences indicates that you are using fanfold paper, Superbase doesn't pause at the end of each page. If you're using single sheets, set Preferences accordingly and Superbase will pause at the end of the page for you to insert a new sheet.

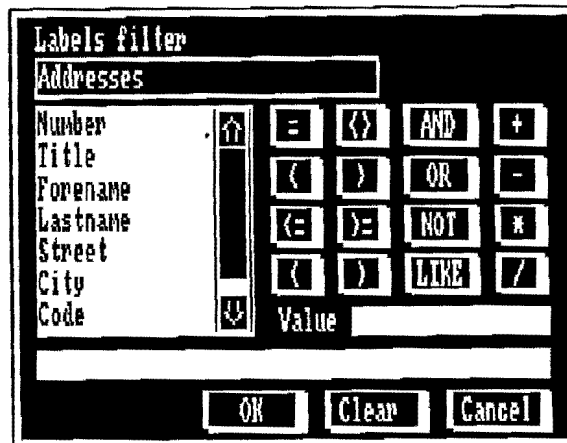
PROCESS LABELS

You can print mailing labels up to four across using this option. You can control the dimensions of the label, as well as the number of fields per line.

Labels uses a standard Filter. Only the open fields from the current file are printed on labels.

Using Process Labels

Select Labels from the Process Menu. Superbase displays the Labels Filter requester.



The requester is the same as the normal Filter requester. See Getting to Know Superbase, pages 1-19 to 1-27, for a detailed explanation of how Filters work.

When you click on OK, Superbase displays a requester to specify the shape and content of the labels to be printed.

Label definition		Label dimensions	
Fields per line			
Line 1	1	1	First label margin
Line 2	1	30	Label text width
Line 3	1	35	Second label margin
Line 4	1	9	First line next label
Line 5	1	1	Copies per label
Line 6	0	2	Labels per line
Line 7	0	↑	Increase
Line 8	0	↓	Decrease
Line 9	0		
Line 10	0		

The requester has three parts. On the left is a panel in which you specify the number of fields per line on the label. To the right are a number of boxes for input of dimensions and other parameters. Below are some extra control buttons in addition to the usual OK and Cancel.

Fields Per Line

Superbase uses the Open Fields List if there is one to determine which fields are to be printed in which order. The number of fields per line varies from one to four, and you can have up to ten lines of data per label. You select the number of fields like this:

1. Click on one of the boxes in the left hand panel. This represents one of the ten possible lines of the label.
2. Click on the up arrow gadget to increase the number in

the panel, or the down arrow to decrease it.

If you don't want any fields to appear on a specific line, set it for zero fields. If Superbase finds a blank field in a record, it compensates by closing up the label lines.

A typical Open Fields The actual label format
List is this: is this:

Title	Title, Firstname, Surname
Firstname	Address
Surname	City
Address	State, Code
City	
State	
Code	

You should arrange the Fields Per Line panel like this:

3
1
1
2
0
0
0
0
0
0
0

Superbase automatically inserts a space between fields when there are multiple fields on a line.

Label Format

To alter any of the settings, click in the box to select it, and then click on the up or down arrows as required.

First Label Margin

This controls the first printing position for the left-hand column of labels. You may have to increase the Second Label Margin before increasing the First Label Margin to ensure that you leave enough room for the label itself.

Label Text Width

This measures the overall width of the label in characters. Superbase won't let you make it overlap the Second Label Margin.

Second Label Margin

This controls the first printing position for the second column of labels. Superbase won't let you decrease it to overlap with the first label.

First Line, Next Label

This sets the interval between labels, by specifying the line on which the first field of the second row of labels is to appear.

Labels Per Line

This varies between one and four.

Copies Per Label

You may specify up to 99 copies of each label.

Test Button

The label format can be tricky to get right, especially if you're using a non-standard size. We have provided a special test function to help you avoid frustrating errors in the actual print run.

When you've set up the label format and fields, align the labels on the printer. Now click on Test.

Superbase prints two rows of labels, using the "X" character to show exactly where the fields will print (it doesn't separate multiple fields on a line).

You can alter the format values and repeat the test as often as you wish.

Single

This is a convenience feature. To save you effort, Superbase allows you to print a "one-off" label or envelope from the current record.

- * Select the record you want as the current record.
- * Select Process Labels, and click on OK.
- * On the Label Definition requester, click on Single.

Superbase prints the open fields from the current record according to the settings on the Label Definition requester. You may need to reset the First Label Margin to get a correct result on an envelope.

THIRTY MINUTE TUTORIAL

This exercise goes through all the single file processing options on the Proces Menu, leaving the two more complex multi-file options, Update and Query, for you to study and practise at your leisure. The objective is to make you familiar with the way these core processing functions work, so that you can start to see how you can apply them to your own database.

First, you will create a new file, so that you can Import data into it. Then you will Export data from the Addresses file (which is supplied on your disk) into a temporary file. Next, you Import this data into the file you have created. Then you can Print some of the Imported records and Labels for them. And finally, you will remove all the records from the new file.

Creating a New File

This file will be used to import records later on in the tutorial. The process of setting up a file is pretty easy, and you should have had some practice by now. So we'll skip the details -- If you need to refresh your memory you can check the Thirty Minute Tutorial on pages 11-22 to 11-32.

The name of the new file is New Addresses. Select New File from the Project menu and type in this name. When the File Definition requester appears, add the following fields,

all of text type:

<i>Name</i>	<i>Length</i>
Title	20
Forename	20
Lastname	20
Street	30
City	20
Code	20

Create the Title field by typing its name in the Field Box, then clicking on the Text button to check that its length will be 20. After exiting from the Field Length requester, click on ADD to add Title to the File Definition Panel.

Create the other fields by simply typing in the field name and clicking on ADD. Reselect Street and click on Text so you can increase its length to 30. When the fields are correct, click on OK to finish the definition process.

Index the new file on Lastname and City. Save the File Definition. Later you will import data into this file.

Opening the Addresses File

Now you must open the Addresses file, which is to be the source for the data to be exported. Select Open File from the Project menu, and click on Addresses, then on OK.

Export from the Addresses File

You are going to create a disk file that contains a copy of some of the data in the Addresses file. You'll use a Filter to specify which records are to be exported.

The other choice you can make in Export is which fields to export. Superbase will use an Open Fields List if there is one, so you must select the Open Fields option from the Project menu. Do this now. Select the following fields:

Title
Lastname
Street
City
Code

Click on OK. Notice that you have only opened some of the fields in the Addresses file, and that these do not correspond exactly to the fields in the New Addresses file. This is intentional, as we want to illustrate the ability to use an Open Fields List for Import as well as for Export.

Exporting Data from Addresses

Select Export from the Process Menu. Superbase displays the Export Filter requester. Click on Lastname, then on LIKE, and then click in the Value Box. Type in this: "[A-G]*" (omit quotation marks). Press Return. The Filter Command Line in the Main Box should read:

Lastname LIKE "[A-G]*"

Click on Clear if it's wrong, and repeat the actions described above.

This Filter means Superbase will only Export those records whose Lastname begins with the letters A, B, C, D, E, F or G, irrespective of how many characters are in the field.

Naming the Export File

Once you've created this Filter, click on the OK button. Superbase requests a name for the Export file. Type in "Add.exp". Click on the OK button. Superbase will now select the records from the Addresses file, and Export them into the Add.exp file.

If Superbase informs you that Add.exp already exists, you have the option to replace the existing file with the new one by clicking on OK, or abandon the Export by clicking on Cancel.

Viewing the Contents of Add.exp

The next step is to look at the contents of the Add.exp file to see what an Export File looks like. Select List from the System Menu. Superbase shows a requester with a list of file names.

The name of the temporary file will be towards the end of this list, so click on the downward facing arrow until the name Add.exp appears. Once it appears move the pointer into the box and click on the name to select this file. Click on OK.

Superbase now displays the contents of the file, and you will see that the data is ordered into Title, Lastname, Street, City and Code. The fields are separated with commas. The Lastnames are in the range A-G. This confirms that the Export has worked as planned. If it hasn't, go back and repeat the procedure. You should also check the Set Options requester and ensure that the Field separator value is 44, and the Record separator value is 10.

Importing Add.exp into the New Addresses File

Before you can Import you must open the file that is to receive the new records. Open the New Addresses file from Project Open File.

Now you must ensure that only the correct fields have been opened. Select Project Open Fields, and open these fields: Title, Lastname, Street, City and Code. Make sure you've opened them in the right order. Click on OK.

Next, select Import from the Process Menu.

Setting up an Import Filter

Although you exported all the records where the Lastname began with a letter from A to G, you are only going to Import a selection of them. When you see the Import Filter, if the Main Box already has a Filter Command Line in it, click on Clear to remove the Line. Then click on Lastname, then on LIKE, then in the Value Box. Type in: "[A-D]*". Press Return. Your Filter command Line should read:

Lastname LIKE "[A-D]*"

This means we want Superbase to accept only those records where the Lastname starts with A, B, C or D. It will reject any record in Add.exp where the Lastname begins with E, F or G.

Once you've entered this Filter correctly, click on OK.

Superbase displays the Import File Name requester, into which you type "Add.exp". Then click on the OK button.

Superbase now imports the records that match the Filter into your New Addresses file.

Checking the Contents of New Addresses

Now you can view the contents of New Addresses with the Control Panel buttons. Click on the First Record button. Then Click on Fast Forward, and the records will be displayed. All the data items from Add.exp should have been placed in their correct fields. In Table View, the records should look like this:

Superbase: New Addresses indexed on Lastname			
Title	Lastname	Street	City
M	Arnauld	33 Avenue du Maine	Paris
	Broonen	83 Digue du Canal	Brux
Mr	Buchanan	306 Kirkbridge Street	Auck
Mr	Cellers	16 High Street	Frem
Ms	Dahlen	2254 Colorado Blvd	Los
Mr	Dale	1185 Coleman Avenue	San
Ms	Duplex	6 Rue des Vosages	Marc

Printing Records from New Addresses

Now you're going to use the Process Print option to obtain a printout of the some of the records in New Addresses.

Before you do this, you should drag the open fields of New Addresses closer together to fit them all onto the page, if you've not already done so. Move Lastname right up to Title, and then move Code closer to City. The screen should look like this:

Superbase: New Addresses indexed on Lastname				
Title	Lastname	Street	City	Code
M	Arnauld	33 Avenue du Maine	Paris	75751
	Broonen	83 Digue du Canal	Brussels	B-1130
Mr	Buchanan	306 Kirkbridge Street	Auckland	
Mr	Cellers	16 High Street	Fremantle	WA 6168
Ms	Dahlen	2254 Colorado Blvd	Los Angeles	CA 90041
Mr	Dale	1185 Coleman Avenue	San Jose	CA 95108
Ms	Duplex	6 Rue des Vosages	Marckolshiem	67390

Setting Up a Print Filter

Select Process Print. The previous Filter Command Line should be in the Main Box. If it isn't, repeat your previous selections to obtain it. Now you can do some direct editing. Click in the Main Box, and then carefully edit the last part of the Line, using the Backspace key to delete the "D", and typing a "C" in its place. The Line should look like this:

```
Lastname LIKE "[A-C]*"
```

Don't forget the final quotation mark. You have narrowed the Filter down, so the only records to be printed will be those where the Lastname begins with A, B or C.

Once you've entered this Filter correctly, click on OK. If you made a mistake in editing the Filter Command Line, Superbase will give you a chance to correct it. If you want, click on Clear, then build up the line from the beginning as you did for the other requesters.

Superbase now prints the records that match the Filter in a Table format that corresponds to the column positions you set up earlier.

Labels

The next part of this tutorial involves printing some labels from New Addresses using the Label Filter and the Label Definition requester. Ordinary paper is fine for allowing you to see the way the label output is formatted. If you have some mailing label stationery, you can set it up in the printer, but the instructions below may not be quite right for your size of label.

Selecting Labels from the Process Menu

Move the pointer to the menu bar and highlight the Process menu, select Labels. You can use the same Filter Command Line as you did for Print, so when the Labels Filter appears, just click on OK.

Label Definition Requester

Once you've done that, Superbase shows the Label Definition requester. Set up the Fields Per Line panel to show these values in the first four lines:

2
1
1
1

The rest can be set to zero. You set a value by clicking on the box you want to change, and then on the up or down arrow to increase or decrease the value in the box.

Now click on the Labels Per Line box, and set it to "2". Leave the other settings as they are. Your requester should look like this:

Label definition		Label dimensions	
Fields per line			
Line 1	2	1	First label margin
Line 2	1	40	Label text width
Line 3	1	35	Second label margin
Line 4	1	9	First line next label
Line 5	0	1	Copies per label
Line 6	0	2	Labels per line
Line 7	0		Increase
Line 8	0		Decrease
Line 9	0		
Line 10	0		

Before printing the labels, do a label alignment test. Click on the Test button. You'll see two rows of labels, two columns each, appear on the printer.

When you're all set, click on the OK button. Superbase prints labels for the records that match the Labels Filter, then returns to the Main Display.

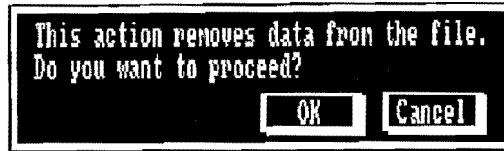
If the output is not as expected, check that the right fields have been opened in the right order, and that the margins in Preferences are correct. Then go back through Process Labels and ensure that the Labels Definition requester settings are right. Remember that the Test option is there so you can experiment freely.

Removing Records from the New Addresses File

The final exercise in the tutorial is removing records from the New Addresses file. Select Remove from the Process menu. You are going to remove all the records from the file, so when you see the Remove Records filter, click on Clear to clear out the Main Box, and then click on OK.

Superbase displays a requester to ask for confirmation

that you do indeed want to remove records from the file.



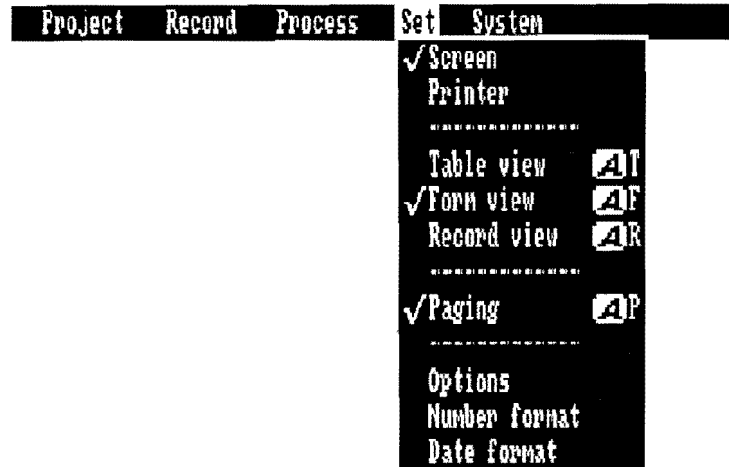
If you're sure you want to delete the records from New Addresses, click on OK. Superbase now removes all the records from the file.

If you use the Control Panel buttons after the processing has ended, you will see that Superbase cannot find any data to display, as the End of File message implies.

The tutorial is now complete, and you should open another file if you want to continue the session.

USING THE SET MENU

The options on this menu affect the way Superbase works. Most are very simple to understand and use.

*Check Marks*

Where one of a group of menu items, such as Screen and Printer, has a check mark against it to indicate that it's currently selected, you can switch the check mark to another item without leaving the menu. Hold down the right-hand mouse button in the usual way and display the menu. Move the pointer down to highlight the menu item that does not have the check mark against it. Now, click the left-hand mouse button once. The check mark appears next to the highlighted item.

You can also select an item in the normal way, by releasing the right-hand button while the item you want is highlighted.

OUTPUT DEVICE*Screen*

This is the default output device for Superbase. All output appears on the screen unless you switch to the printer.

Printer

This selection permits you to make a printed copy of output which would normally appear on the screen.

On the Amiga system, you set up your printer from the Preferences system utility, not from within Superbase itself. Preferences includes drivers for a range of printer types, as well as settings for paper size, etc.

VIEWS

*Table View**Amiga-T*

Table View is used to display or print records in columns. While you are using Table View to browse through your records the field names appear at the top of the screen, with the data for each field below the name. If the Printer is in use, you will receive a printout of the screen, with the field names printed as if at the top of each screen.

While Table View is selected, you can move the columns of data right or left by clicking and holding down the left-hand mouse button in the column you want to move, then dragging the column to its new position. There are some rules governing what you can and cannot do:

- * You cannot move the left-hand column.
- * All columns to the right of the selected column move with it.
- * After moving a column to the right, you may have to redisplay the data if a column has been truncated.
- * The current settings remain even if you open a different set of fields for the file.

- * If you have dragged columns to compress the display, you can restore the true length of a column by double clicking in it.

Table View is turned off by selecting Form View or Record View.

Form View

Amiga-F

Form View allows you to design your own screens for entering and displaying record data.

The first time you select Form View for a new file, the field names are displayed down the left hand side of the screen, with the data for the current record, if there is one, to the right, one field per line.

You can rearrange the screen. You do this by clicking on a field name with the left-hand mouse button, and, while keeping the button depressed, dragging the field to its new position on the screen. There are a number of rules:

- * The worksheet on which the fields can be positioned is 273 columns wide.
- * The number of lines available is determined by the number of fields in the file definition.
- * Fields which are not open are not shown.
- * Paging is automatically switched on. This allows you to scroll the window in both axes.
- * You cannot overlap field names or data areas.

*You must save the File Definition with Project Save File
In order to store the current Form View.*

If you're in Table View and you select Record New, Record Edit or Record Duplicate, Superbase automatically switches Form View on.

Selecting either Table or Record View switches Form View off.

Record View

Amiga-R

Record View is also used to display records on the screen. However, this time the field names appear down the left-hand side of the screen, right-aligned to a fixed point.

The data from the open fields for each record is shown in a block. If Paging is off, the record blocks will scroll up or down the screen when you use the Control Panel buttons.

This feature is switched off by selecting Table or Form View.

PAGING**Amiga-P**

While you are viewing the records within a file you may only want to see just one "page" at a time. The effects vary depending which of the three Views described above is switched on. You toggle Paging on and off by selecting it from the menu in the normal way.

Paging In Table View

When Paging is on, Superbase displays a screen of record data, one record per line, until the screen is full. It then selects the Pause button and waits. Click on Pause to see the next screen of data, or another record selection button to perform another action.

When Paging is off, Superbase continues until it reaches the end of the file or you interrupt it by clicking on Pause or Stop.

Paging In Record View

When Paging is on, Superbase displays one record at a time on a screen by itself. When paging is off, Superbase displays the records one after the other on the same screen. Fast Forward or Rewind scrolls through the records until Superbase reaches the end of the file or you interrupt with pause or Stop. (If a record is longer than the screen then on single record selections such as Next Record Superbase scrolls to the last field and stops.)

Paging in Form View is always switched on.

The Paging function does not affect the printer. To switch

between continuous and non-continuous printing, use the Workbench Preferences utility.

OPTIONS

Some functions that are carried out by Superbase can be changed to suit your individual preferences. The range of items you can change is shown on the Options requester, which is displayed when you select Options from the Set Menu. The requester looks like this:

System options

Display speed

Decimal point format

Currency symbol

Import / Export

☒ Field separator

☐ Record separator

☐ Use quotation marks

Buffer count

☐ External file query

OK Cancel

Whenever you use Set Options, Set Number or Set Date Superbase creates a file called "superbase.par". This file contains a set of parameters which are used in various Superbase functions.

The file can be viewed with System List, and contains the following parameters: currency symbol, currency separators, default number format, default date format, Superbase System date, import/export field separators, import/export record separators, import/export quotation marks if that option is selected. Direct editing of the file is possible and does allow you to specify your own currency symbol of

up to four characters.

However, an invalid parameter file will cause Superbase to shut down on start up. If this happens you will have to edit the file via the CLI, and correct any errors before using Superbase.

Display Speed

The first item that you can change is the display speed. This controls the amount of time that a record or picture is displayed on the screen before the next one is displayed. The feature is used in two situations:

- * When scrolling records in Table View or Record View, in either Fast Forward or Rewind direction.
- * When External Files are being displayed in Fast Forward or Rewind direction, or in a Query.

To alter the display speed simply move the pointer and click on the vertical bar. You can then drag the bar to the left to make the display speed slower, or to the right to make it quicker. The default speed setting is the fastest.

Decimal Point Format

The option enables you to change the format of decimal numbers as they appear on the screen. There are three choices:

- * 9,999.00 (default value)
- * 9.999,00
- * 9 999,00

To change the format simply click on the arrow to the right of the box. The display changes to show a different format. Repeated clicking on the arrow cycles through the three options.

When you click on the OK button, Superbase will use your chosen format to display decimal numbers.

Currency Symbol

This allows you to change the currency symbol for numeric fields whose format includes a currency symbol. The selection is global -- you cannot have different currency symbols for different fields, although you can choose to print individual characters as such, e.g. "\$". The choices are as follows:

£	Pound	SEK	Swedish Krona
\$	Dollar	öS	Austrian Schilling
DM	Deutschmark	mk	Finnish markka
F	Franc	Drs	Greek Drachma
Fr.	French Franc	L.	Italian Lira
₣	Peseta	G	Guilder
¥	Yen	R	Rand
DKr	Danish Krone	TL	Turkish Lira
Kr	Krona / Krone		

In order to change from one symbol to another, simply click on either the left-hand arrow or the right-hand arrow which are at either end of the currency box. You can cycle through the sequence "downwards", but not "upwards" past the dollar symbol.

Import/Export

You can specify the characters that are to be used to separate fields and records from one another when you are Importing or Exporting. The character itself is specified by typing in the ASCII code that is equivalent to the character you want to use.

The default values are Field Separator 44, which is a comma, and Record Separator 10, which is a Carriage Return.

A list of ASCII codes is provided in the Appendices at the rear of this manual.

If you want to change a value move the pointer and click in the box. This will produce the cursor and you can then type in the new ASCII code. Remember to press Return to register the change.

Warning. Do not use the same character as both field and record separator.

Quotation Marks

Fields may contain punctuation marks such as commas. This can cause problems, as any character that is the same as the Field Separator character will be treated as such unless it is enclosed in double quotation marks. This option allows you to specify that every field Exported will be enclosed in double quotation marks.

To switch this feature on, click on the button next to the option. To switch it off, click on the button in its selected mode.

Superbase automatically discards double quotation marks around fields when it finds them during an Import.

Buffer Count

This option varies the amount of memory Superbase uses to store record data. Increasing the number of buffers cuts down the number of times Superbase accesses the disk drive, and so increases the speed of the program. However, a very large number of buffers gives Superbase more work to do checking their contents in certain operations, and so slows the system down. Each buffer requires 512 bytes, so the total memory allocated to buffers can soon mount up. It's best to compromise: the recommended number to use is between 10 and 20.

External File Query

This feature applies to the Query option on the Process menu. If External File Query is OFF and you output an External File Field as part of a Query, you'll see only the textual content of the field: the name or pathname of the external file. However, if you set this feature ON and then output an External File Field in a Query, you'll see the picture itself, as if you were doing a Fast Forward.

DEFAULT FORMATS**Number**

This option is fully described in the section on creating a new file. See page II-7.

The purpose of having the Number Format requester also available from this menu is to allow you to set the format for a derived number. A derived number is the result of a mathematical expression, involving numeric fields, functions, or values. An example would be Quantity * Price. Derived fields can only be output as part of a Query.

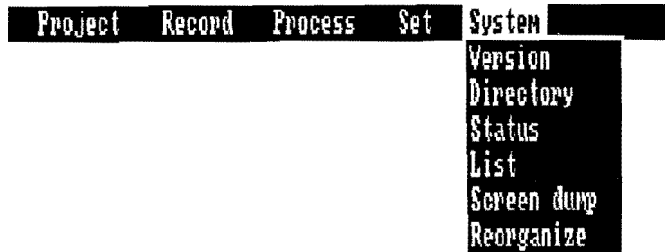
Date

Like Number, the Date Format requester is described in the section on creating a new file. See page II-10.

Similarly, the purpose of having the Date Format requester also available from this menu is to allow you to set the format for a derived date. A derived date is the result of a mathematical expression, involving date fields, numeric fields, functions, or values. An example would be Meeting Date + 15. Derived fields can only be output as part of a Query.

USING THE SYSTEM MENU

The options on this menu are utilities for improving your understanding and control of your Superbase database.

*Hard Copy Documentation*

You can obtain a printout from certain system options by switching the Printer option on from the Set menu. Printable options, in addition to Screendump, are:

Directory List
Status File
Status System
List

VERSION

This displays the Copyright Notice and Program Credits. It also includes the Version Number of your copy of Superbase. If you need to request software support, be sure you can cite your version number.

DIRECTORY

List Amiga-D

This produces a listing of the current directory, in sorted order. The name of the directory and the date are also given.

Change

This enables you to change from one directory to another. For example, if you are currently using df0: and you want to change to a directory on df1:, you would select Directory Change, and type in the following:

df1:directory name

STATUS**File**

This option provides a snapshot of the status and statistics of the current file.

Superbase: Addresses indexed on Number

FILE STATUS REPORT FOR: Addresses

Current index: Number

File is valid Record count: 32

Password: No Field count: 8

Privileges: All Index count: 4

Block size: 128 Bytes File size: 4224 Bytes

Field name	Attributes	Format	Location	Formula
Number	TXT	REQ IXD 10	1	3
Title	TXT	10	3	3
Forename	TXT	15	3	22
Lastname	TXT	IXD 15	3	49
Street	TXT	30	5	3
City	TXT	IXD 15	7	3
Code	TXT	12	7	26
Country	TXT	IXD 15	9	3

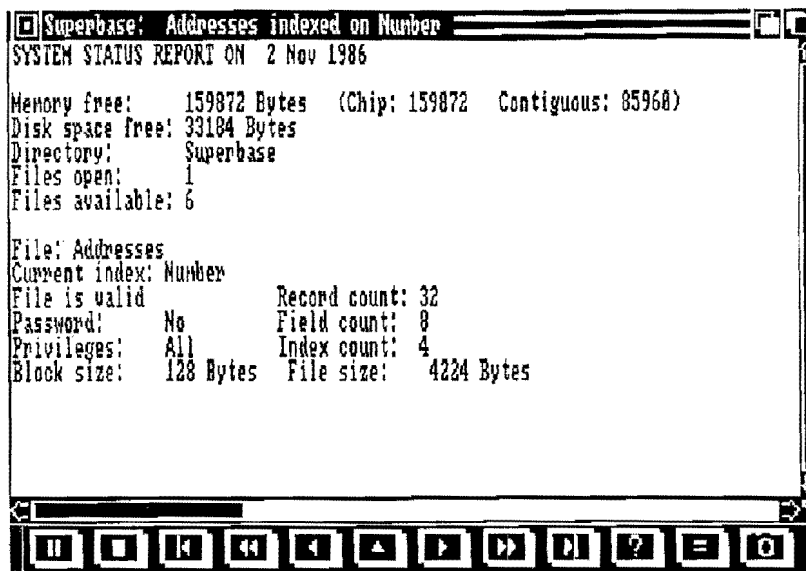
Navigation icons: [Back] [Stop] [First] [Previous] [Next] [Last] [Find] [Help] [Print] [Exit]

Statistics include: current index, number of records, number of fields, number of indexes, block size and file size. Also detailed are the field names, attributes, format, and Form View co-ordinates for each field, and any calculation or validation formulas. Finally, you can see whether a password has been set, the type of read/write

privileges for the file, and the file's valid/invalid status.

System

This provides a summary of the data described above for all open files, but excluding statistics for the individual files.



Additional data is shown for these items: Amount of free memory, amount of free disk space, current directory, number of files open and the number of files available.

Free Memory and the External File System

Free memory includes the amount of free memory available in the form of chip memory as opposed to fast memory, and the largest single amount of contiguous free memory

available to the Amiga custom chips. This contiguous memory is required for the External File System to operate properly, because the Amiga can only display pictures from its custom chips. Depending on the kind of picture being displayed, there may be insufficient memory: even low resolution pictures can take 40K, and high resolution pictures can require 80K. If the figure shown by Status System is less than 40K, you must either not use the External File System or else close down some other tasks from the Workbench before resuming with Superbase.

List

The purpose of List is to allow you to view text files, such as Export files, Superbase ".sbd" files, or any ASCII file. You cannot use it to view program or database files.

When you select List, Superbase displays a requester which lists the files for the current directory. You can then pick the file whose contents you want to view.

As Superbase displays or prints the contents of the file it ignores tab characters.

If the file contains non-printable characters, Superbase will display a "Can't do this" message and stop the display.

Screen Dump

Enables you to dump the contents of the current Superbase screen onto a printer.

REORGANIZE

After you have been using Superbase for a while you will need to tidy up the files and reclaim any space that you've lost when you have deleted records and files. This option does all that for you, but as it takes some time we advise you to use it periodically and not on a regular basis.

Reorganize works with the current file.

Once you select Reorganize from the System Menu, Superbase asks you for an optional device and pathname. To specify a full pathname, enter a device name ending with a colon, followed by a directory name ending with a slash, e.g. "df1:sbfiles/". Superbase will then create the new files and indexes with their original names in the specified directory. Alternatively, you can enter any character string not ending in a slash, e.g. "temp". Superbase uses the string as a prefix to the original file name, so that, for example, "addresses.sbd" would become "tempaddresses.sbd".

Warning. Do not specify the current directory without a string that can be used as a prefix.

EXTERNAL FILE MANAGEMENT SYSTEM

This unique feature allow you to store the names of external files in a Superbase database file, and display both the database records and the external files themselves using the database's indexing and searching facilities. The external files can be created with almost any of the popular Amiga graphics programs, and must be in IFF format. They may reside in the same directory as the main database file, or in a separate directory, or even on a separate disk.

The applications for the External File Management System are unlimited. Whether you are storing digitized video images of houses for a real estate business, CAD drawings, or just your own paint program creations, a powerful cross-referencing and display manager is a valuable aid to efficiency.

We have included a demonstration file on your Superbase disk, called Pictures. Open it now, if you want to able to refer to it while reading this section. Ensure that you have sufficient contiguous memory before you view the external file pictures. This should be at least 40K for a low resolution image.

EXTERNAL FILE FIELDS

In the File Definition, there is an External File field type. External File fields are like Text fields, except that Superbase can use their contents as path names for external files. A path name is simply a path through the AmigaDOS directory structure to the file itself. The contents of an external File field can be:

- * A file name.
- * A path name that includes a file name.
- * A disk volume name that includes a path name and a file name.

File Name: Same Disk, Same Directory

At its simplest, an External File field refers to a picture in the same directory as the database file:

Copperstate

This is the name given to a picture created with a paint program.

File Name: Same Disk, Different Directory

If you want to access a picture file in another directory you must include the name of that directory in the External File field. Superbase can then go to that directory, open the file and read the data.

Suppose you had some pictures on your Superbase disk in a directory called Artwork. The External File field contents would have to look like this:

Artwork/Copperstate

File Name: Different Disk

If your external file was on another disk, you would have to start your Path with the name of the disk, or "volume name". Continuing with the last example, suppose the Artwork directory was on a disk called Picture Library. The External File field would have to hold the following path name:

Picture Library:Artwork/Copperstate

The colon at the end of Picture Library tells Superbase that Picture Library is a disk volume name. Superbase will therefore expect to find the disk with that volume name in one of the Amiga's disk drives.

If the disk is not present, Superbase will ask for it with a system requester. This feature allows you to construct multi-volume picture libraries with all the database information held in a file on one disk, while the pictures themselves are held independently on other disks.

VIEWING EXTERNAL FILES

Ensure that the Pictures demonstration file on your disk is open. It should look like this when Form View is set and the first record is selected:

The screenshot shows a window titled "Superbase: Pictures indexed on Number". Inside the window, there is a table with three rows of data. The first row shows "Picture 1: Copperstate" and "Source 1: DPaint". The second row shows "Picture 2: Horses" and "Source 2: Digitized". The third row shows "Picture 3: Paula" and "Source 3: Donald". Below the table is a control panel with several buttons: a pause button, a stop button, a back button, a forward button, a first button, a last button, a search button, a help button, and a close button.

Picture	Source
Picture 1: Copperstate	Source 1: DPaint
Picture 2: Horses	Source 2: Digitized
Picture 3: Paula	Source 3: Donald

You can see that the file is indexed on Picture Number, and there are three pictures for this record. These are Picture 1, 2, and 3. Think of these pictures being on three different levels, with Picture 1 being on the highest level. These "levels" become important when you start to move around from record to record using the External File System Menus.

External File Button

Now that you have opened the Pictures file and the first record is on the screen, you can look at the first picture. To do this you have to click on the External File button at the right-hand end of the Control Panel. Click on it now.

Superbase displays the external file named in the first External File field for the current record. It's called Copperstate.

The External File button always shows a picture if it can find one. You do not click on this button to close down the External File screen; for that you use the Close

option from the Control Menu, described below.

If you look at the top of the screen you will see the title of the picture. To the right are the depth gadgets, which will be explained later.

The External File System uses its own screen and window, and has a separate set of menus for controlling the pictures.

PROBLEM: MENUS WON'T DISPLAY

If you can't display the External File System menus when you press the right-hand mouse button, this is because the window is inactive. You must click in the window with the left-hand button once to activate the window. This is a feature of the Amiga's Intuition windowing system.

IMAGE MENU

This menu provides three options for selecting pictures individually, *within a single record*.

Next

Copperstate is the external file named in the first External File field. If you want to see the picture for the next External File field, you must select Image Next. We refer to this as selecting the next "level" in the External File system.

Select Image Next in the usual way, by holding down the right-hand mouse button while moving the pointer to highlight the item you want, then releasing the mouse button.

Try this now. Superbase displays the picture named in the second External File field in the first record in the Pictures file.

Whenever Superbase displays the message "No External Data", this indicates that the selected record has no file name in the External File field.

Previous

This option is the opposite of Next. If you want to go up a "level" and view the picture named in the first External File field in the current record, you must select Previous from the Image Menu.

Advance

Some IFF files may have more than one "frame" in them. In such cases, you can display the next frame by selecting Advance from the Image menu. There is no option to display the previous frame.

RECORD MENU

The options on this menu are like those on the Main Display Control Panel. They allow you to select records within the database file. When Superbase selects a record, it uses the External File field at the current "level" to find and display a picture. The message "No External Data" indicates that the selected record has no file name in the External File field at that level.

If you have a Filter in use in the Main Display, Superbase will only select records that match the Filter.

First, Last, Next, Previous

Each of these options selects a single record in the database file, and uses the External File field at the current "level" to find and display an external file.

Forward

This option finds and displays the external files -- at the current "level" -- for all records from the current record to the end of the file. This gives you a "slide show" capability.

- * If a Filter is active, Superbase will use it.
- * The duration of the display can be varied from the Set Options requester.

- * You can Interrupt the display by selecting Pause or Stop from the Control Menu, or clicking on the Pause or Stop buttons on the Control Panel, if you've made it visible.

Rewind

This option is the opposite of Forward. It causes Superbase to go backwards through the file and display one image after another until you reach the beginning of the file.

CONTROL MENU

This menu provides some simple control options.

Pause

While Superbase is displaying in either Forward or Rewind mode, you may want to pause and look at one of the pictures. You can do this by selecting Pause from the Control Menu. Superbase completes the current display and stops. If you look at the Control menu you'll see that this option is highlighted to show it's active. Once you've selected this option from the Menu, Superbase will leave the current picture on the screen until you select Rewind or any other Menu option.

Stop

If you want to stop during Forward or Rewind, use Stop. Superbase completes the current display and stops. You can now use any other menu option.

Hide and Show Title Bar

The purpose of these options is to allow you to remove the title bar from the External File window, so that a Screen Dump doesn't reproduce it. The title bar normally shows the name of the picture being displayed -- or "No External Data" if Superbase can't find an external file.

Screen Dump

The Screen Dump option allows you to reproduce the External File window, provided you have a printer capable of high resolution graphics. The parameters for graphics printing are set from the Preferences system utility.

Close

Use this option to close down the External File screen and return to the Superbase Main Display. When you're selecting records from the Main Display and the External File button is highlighted, Superbase automatically finds and reads external files. This slows the system down. If you want to stop Superbase reading external files, enter the External File screen, and select this Close option. (See also Querying External Files, below.)

COMBINED DATABASE RECORD AND EXTERNAL FILE DISPLAY

It's possible to resize windows and drag windows and screens so that both data and picture are visible on the same physical screen. This allows you to provide a caption or other relevant information for the picture, or to use the Control Panel buttons instead of the Record and Control Menus.

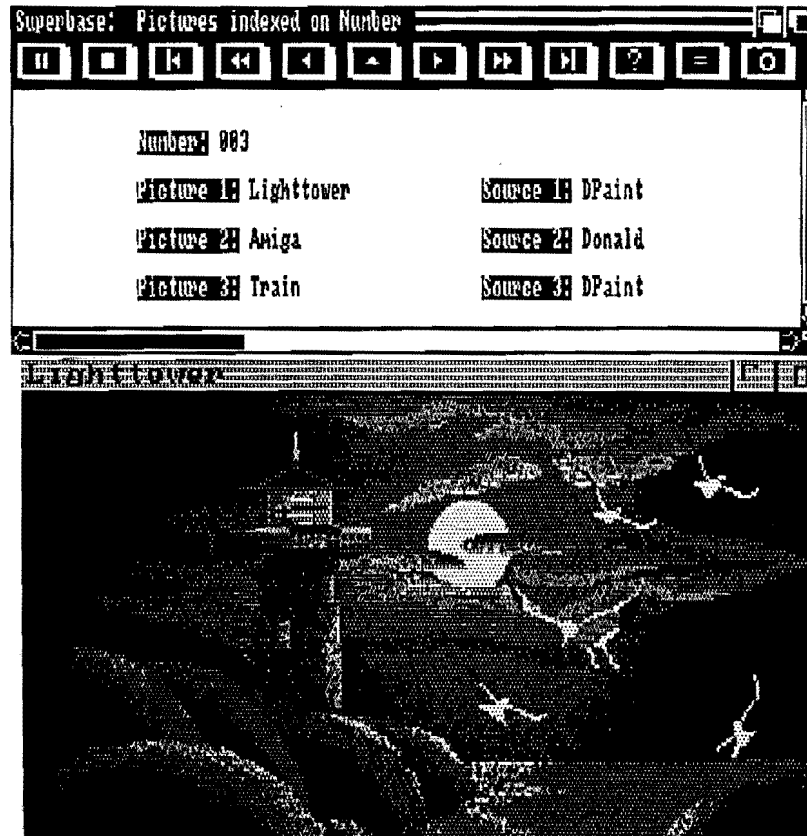
Moving Screens

In the External File screen, move the pointer to the title bar, press and hold down the left-hand button of the mouse, then drag the pointer down to the bottom of the screen. The picture moves down the screen and reveals the Superbase Main Display behind. You can release the mouse button at any point, so that any proportion of the picture remains visible.

Sizing the Superbase Screen

If you drop the External File screen right down, you can move the pointer into the Superbase screen and use its gadgets.

- * Use the resizing gadget to make the Main Display window smaller.
- * Drag it down the screen a bit.
- * Drag the Control Panel window up to the top of the screen, above the Main Display.
- * Re-enter the External File screen, *click once to activate it*, and drag the screen up to the bottom of the Main Display window. Your screen should look something like this:



Control Panel

You can now use the Control Panel in the same way as you normally would with Superbase files. But having the screen arranged as it is means you can see both the current record and the picture for the current "level" of External File field.

Depth Gadget

In the External File screen, you can flip the current image behind the Superbase screen by clicking on the depth gadget on the Title bar of the picture. To get the picture back again you simply click on the External File button on the Control Panel.

Don't try to redisplay the External File screen with the Superbase Main Display depth gadget. Use the External File button.

QUERYING EXTERNAL FILES

You can use the facilities of the Query option on the Process Menu to produce picture output in conjunction with data output. Two steps are necessary to achieve this:

1. Select the External File Query button in the Options requester on the Set Menu.
2. Name the External File field or fields that you want to view in the Query Fields line.

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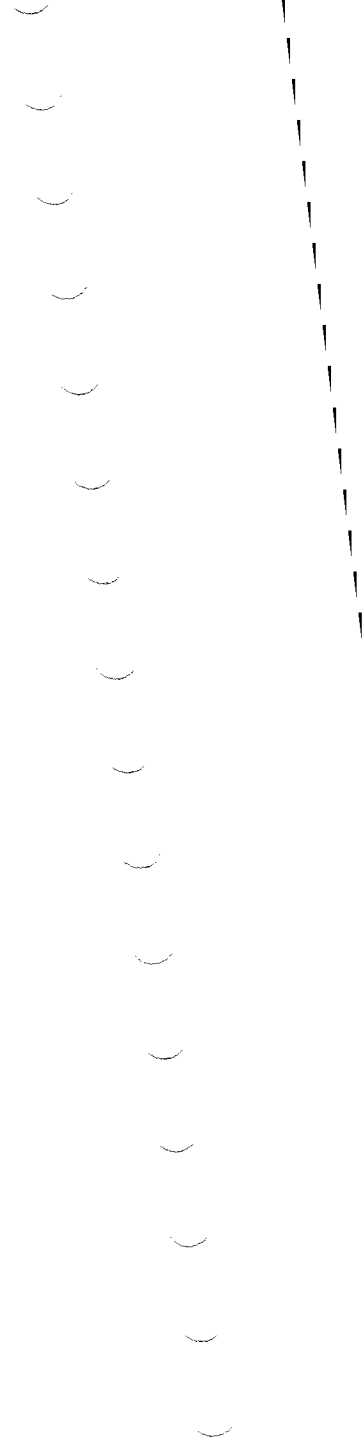
)

)

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PART III

Reference Guide



GUIDE TO THE SUPERBASE MENUS

This section of the User Guide allows you to find out quickly what each Superbase menu option is for. More detailed information is given in Working With Superbase.

PROJECT MENU

The Project menu contains the main options for managing the database: selecting the files, fields, and indexes for other menu options to use.

Project New File

Create a new file. You enter the field names, formats, and attributes, plus any required formulas and input validation checks. The system then creates a file with a ".sbd" extension to hold the file definition and a file with a ".sbf" extension to hold the record data.

Project New Index

Create a new index. Indexes can be used to display the records within a file in different orders, and for quick retrieval of records. Once you have created a new index, an index file will be created in the directory. This will have the same name as the file with an extension consisting of a full stop and a number.

Project Open File

Open an existing file. You can open more than one file at any one time, but only one can be the current file. The Query and Update functions can use multiple files. The number of files you can open depends on the amount of available memory.

Project Open Fields

Open a list of fields. Once you have opened a file you can choose which fields to view, and so limit the amount of space each record takes up on the screen. This option enables you to choose those fields you want to see, for each record within the current file. If you have not

opened a list of fields, then all the fields for the current file will be displayed.

Project Open Index

Choose and open an existing index. The records in the current file are presented in the order of the open index.

Project Open Query

Choose and open a Query Command Line previously stored on the disk with Project Save Query. The selected query is restored ready for use.

Project Close File

Close an open file. This option lets you choose which of the open files you want to close, reducing the amount of memory needed by Superbase.

*Project Close Fields**Amiga-C*

Close a list of fields. Once you have closed the list you can view all the fields within the current file, instead of only those you have opened. The list of fields is still available and you can re-open it with Open Fields.

Project Edit File

Change the definition of the current file. You can add or delete fields, change field names, field lengths and field types, as well as any formulas or validation checks.

Project Save File

Save the current definition of the current file. If you have made any changes to the file definition using Edit File and you wish to make them permanent, you should do so using this option.

Project Save Query

Save the settings for the current query. Superbase stores the title, settings for totalling, etc., and the Filter and Sorting instructions as they were last set up with Process Query, in a ".sbq" extension file. Use Open Query to load a previously saved query and re-use it.

Project Remove File

Remove an open file from the disk. The ".sbd", ".sbf" and all index files associated with the selected file are deleted.

Project Remove Index

Remove an Index from an open file. The relevant index file is deleted.

Project Quit

Exit from Superbase and return to the Workbench.

RECORD MENU

The Record menu contains all the options for entering and editing data into a file.

*Record New**Amiga-N*

Enter a new record into the current file. Superbase presents a blank record and you type the data into the fields. If you have opened a list of fields, then you can only enter information into those fields.

*Record Edit**Amiga-E*

Change the details of the current record within the current file. The record you wish to edit must be the current record. You can only edit those fields you have opened. If you are viewing the current record in Table format and you select this option, Superbase automatically

switches you to View format or Form format and sets the Paging option on.

Record Duplicate

Make a copy in memory of the current record. This can then be edited and saved as a new record. The function saves time when you are entering the same or very similar information into more than one record.

Record Remove

Remove the current record from the file. Superbase waits for your confirmation before finally removing the record.

Record Save

Amiga-S

Save the current record in the current file. This is used after you have entered record details with New, Edit or Duplicate. You can call up the Record Save requester at any time by double clicking the mouse.

PROCESS MENU

The Process menu options cover all the main database processing requirements: searching, sorting, reporting, updating, deleting, importing, exporting and label printing. All options allow the use of a Filter to determine which records are to be processed.

Process Update

Automatic update of one or more fields within a set of records from one or more files. The Filter can refer to more than one file.

Process Query

Interrogate the database to produce information from one or more files. You can include report formatting and analysis functions in the query. The results may be sorted in any order, and then output to the screen, the printer,

a disk file, or a new database. Queries may be stored on disk and recalled.

Process Remove

Remove a group of records from a file, according to the values and conditions set in the Remove Records Filter.

Process Import

Import data into a Superbase file. You must first set up the necessary file definition. You can select the field and record separators to match the format of the import file. A Filter determines which records are accepted into the file.

Process Export

Export data from a Superbase file. The function uses the current set of fields and a Filter. You can define your own field and record separators.

Process Print

Produce a listing of the current file. The function outputs the current fields to the printer using Table format. A Filter determines which records are selected for printing. The paper length and printer type are set from the Preferences system utility.

Process Labels

Print a selection of labels. You can print labels up to four across. Up to four fields may be placed on each line of a label. A Filter determines which records are selected for printing.

SET MENU

The Set menu contains a number of options which directly affect the way data is processed and presented.

Set Screen

Send all output to the screen.

Set Printer

Copy all output to the printer.

Set Table View***Amiga-T***

Set the screen display to Table View. When you set this option the field names appear across the top of the screen, with the data for each field in the same column as the field name.

Set Form View***Amiga-F***

Set the screen display to Form View. You can rearrange the line and column positions of the fields in Form View by dragging them around the screen. The arrangement of fields last saved with Project Save File is recalled when you set this option.

Set Record View***Amiga-R***

Set the screen display to Record View. When you set this option the field names will appear down the left hand side of the screen, with the data for each field on the same line as the field name.

Set Paging***Amiga-P***

Switch Paging on or off. This allows you to choose whether you want to see the data in a continuous list (Paging off), or a page at a time (Paging on). The Record menu

data entry options all switch Paging on automatically, as does Set Form View.

Set Options

Lets you alter a number of system settings. You can change the speed at which records are scrolled onto the screen. You can also change the currency symbol, and select an alternate format for thousands and decimal point separators. Import and export field separators and external file handling controls are also set here.

Set Number Format

Choose the format for temporary numeric data such as the product of a multiplication of two fields.

Set Date Format

Choose the format you want temporary dates to appear in, and set the Superbase system date.

SYSTEM MENU

The System menu includes a number of utilities to increase your control over the database.

System Directory List

Amiga-D

Produces a sorted list of the contents of your current directory. This can be sent to either the screen or the printer.

System Directory Change

Switch to a new directory or subdirectory.

System Status File

Gives you a report of the status of the current file,

including selected statistics. The output of this and the next function can be printed by setting the Printer option on.

System Status System

Gives you a short form report of the status of all the open files.

System List

Produces a listing of any text file in the directory. The listing will appear on the printer if the Printer option is selected on the Set Menu.

System Screen Dump

Produces a screen dump on the printer.

System Reorganize

Reorganizes your database. This will be needed once you have been using your database for a while, and is used to tidy up the file space and make access time quicker.

EXTERNAL FILE SYSTEM MENUS

Caution. If pressing the right-hand button of the mouse does not display the menu bar, click the left-hand button once to activate the External File window, then try again. This is a feature of the Intuition windowing system.

CONTROL MENU***Control Pause***

Halts when the current picture is fully displayed. This enables you to pause and look at the image on the screen. You can continue with the current process by re-selecting this option from the Control Menu.

Control Stop

Brings the current process to an end.

Control Hide Title / Show Title

Hide Title removes the title bar from the top of the screen, allowing uninterrupted viewing of the image. The menu bar is still accessible with the right-hand button of the mouse. Show Title restores the title bar.

Control Screen Dump

Prints a copy of the current image onto a printer, provided one has been set up correctly for graphics output using the Workbench Preferences utility.

Control Close

Exits from the External File System and return to the normal Superbase screen. The External file button from the control panel is de-activated, to reflect the fact that you have finished using the External Files.

RECORD MENU***Record First***

Displays an image from the first record in the current file. Same as using the First button from the Control Panel.

Record Last

Displays an image from the last record in the current file. Same as using the Last button from the Control Panel.

Record Next

Displays an image from the next record, not the next image from the current record (see Image Next).

Record Previous

Does the opposite of Next: displays the image from the previous record, not the previous image from the current record (see Image Previous).

Record Forward

Enables you to display all images for each record from the current position until the end of the file. Superbase will pause at the end of each image before displaying the next. When the end of the file is reached Superbase will display the normal Superbase screen, and a message informing you that you've reached the end of the file.

Record Rewind

Does the same as Forward, but in the opposite direction.

IMAGE MENU

This menu provides options to manipulate the external files associated with a single record.

Image Advance

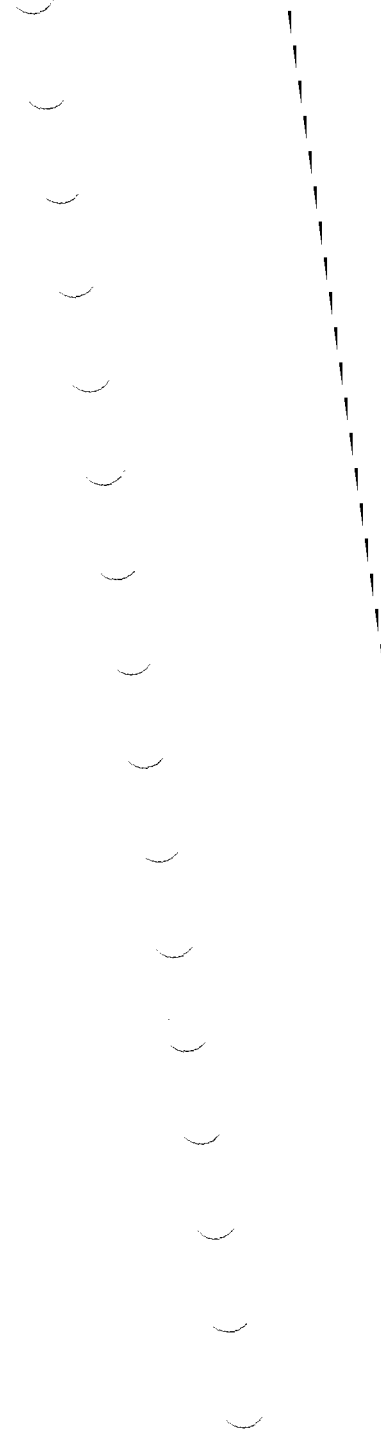
Displays the next image for the current field. This can be used to show the next image in an external file when the file has more than one image in it.

Image Next

Displays the next image within the current record.

Image Previous

Displays the previous image within the current record.



APPENDICES

ERROR MESSAGES*A file must have at least one index*

If you need to remove and rebuild the only index to a file you must first build a temporary one on another field. To change from a unique to a duplicate index, you must remove and rebuild it.

Access to file not allowed

The file requires a password. Password protection cannot be removed and passwords cannot be changed. If you want to dispense with password protection for a file, you must export all the data and then import it into a new file.

Can't access directory

System error or the directory doesn't exist. Check that the correct disk is inserted.

Can't access disk information

System error. DOS cannot return directory information.

Can't AND -- illegal values

The AND operator cannot handle values greater than 2,147,483,647 or less than -2,147,483,647.

Can't divide by zero

Divisor in an expression or equation is equal to zero.

Can't find this field

Usually caused by mis-spelling a field name. Superbase treats any text item that is not a string variable or a reserved word as an attempt at a field name.

Can't find this file

Usually caused by mis-spelling a file name in a command line. Superbase treats a text item following a period (full stop) as an attempt at a file name.

Can't open the printer

Physical system error. Check that the printer is correctly connected and switched on.

Can't OR -- illegal values

The OR operator cannot handle values greater than 2,147,483,647 or less than -2,147,483,647.

Closing parenthesis missing

Error in formula or command line. There must be an equal number of opening and closing parentheses.

Data too long for field

Occurs when you try to set data into a field with expressions such as: field a = field b + field c. Edit field length if necessary.

Data types don't match

Caused by combining different field variables or literal data types in one expression.

Disk Full

If Superbase encounters a disk full condition while attempting to write a data or index entry, you will receive an AmigaDos "Retry/Cancel" error message. In this situation you should first use the CLI to delete other files on disk, then click on Retry. If you click on Cancel either by mistake or because you're unable to create space on the disk, Superbase won't be able to complete its disk writing activity, thus leaving an incomplete data or index entry.

In this case shut down the system and use System Reorganize to recreate the current file on another disk; if this fails, recover from a security copy of your disk. If the disk itself has an error on it, you may still be able to repair your data with a "disk doctor" type of utility.

DOS can't open file

System error while trying to open a Superbase ".sbf" or Index file.

DOS can't open input file

System error while trying to open a Superbase ".sbd" or other sequential file for input.

DOS can't open output file

System error while trying to open a Superbase ".sbd" or other sequential file for output.

DOS error deleting file

System error during Project Remove, File or Index.

DOS error reading data

Disk read error while reading a Superbase ".sbf" or Index file.

DOS error reading file

Disk read error while reading a Superbase ".sbd" or Index file.

DOS error writing data

Disk error while writing a Superbase ".sbf" or Index file.

DOS error writing file

Disk error while writing a Superbase ".sbd" or other

sequential file.

Duplicate entry for this index

Index allows unique entries only. Can occur when saving a record or importing records leaving blank index fields.

End of external file

Image Advance produces this message when the external file is only one screen or "frame" long.

End of file

Information message.

External file not compatible

External files must be IFF compatible for Superbase to be able to display them.

External file not found

Occurs when the file named in an External File field is not found where it should be. Check directory and/or path name and/or disk volume name.

Field already exists

Each field name in a File Definition must be unique.

Field does not match validation

If a field has a validation formula you must enter data within the formula's limits. Error can occur during Import or when editing records. Use System Status File to read Validation formulas.

Field not defined

Superbase application program error.

Field requires numeric data

You cannot assign text data to a numeric field.

Field requires text data

You cannot assign numeric data to a text field.

File already exists

Superbase will not allow you to overwrite an existing file.

File contains non-text characters

Illegal control character detected in Superbase ".sbd" or other sequential file.

File data in wrong format

Illegal field and/or record separator detected during import.

Formula too complex

Evaluation capabilities have been exceeded.

Function not allowed with text

Mismatch of function and arguments. See Appendix C.

Function not allowed with number

Mismatch of function and arguments. See Appendix C.

Function syntax -- comma missing

See Appendix C.

Function syntax -- invalid parameter

See Appendix C.

Incomplete -- field or value missing

Superbase has detected an error in a formula or a command line. Check that expressions are complete and do not end with an operator.

Invalid date

The full date range is January 1, 0001 to December 31, 9999. You have probably entered a date in the wrong day, month, year sequence giving a month number greater than 12, or tried to enter illegal text or date separators.

Insufficient Memory

You will see this message when you try to view an External File or do a sort using Query Order, and Superbase cannot find sufficient memory to do the operation. Close down some other processes and try again.

You may also see a red bordered black Alert box with an Out of Memory message when Superbase cannot find enough memory for other kinds of operation. This happens most often when Superbase is trying to display a requester; pressing the mouse button to continue is equivalent to clicking on the requester's Cancel button. If pressing the mouse button returns you to an existing requester, you should click on Cancel to exit except for the File Definition requester where you should click on OK. Close down some other processes before resuming work.

Invalid date format

Superbase application program error, or ".sbd" file invalid.

Invalid field name

Reserved words are not allowed: see Appendix D. Field

names may not begin with numbers, and should include only alphanumeric, space and underscore characters.

Invalid field type

Superbase application program error, or ".sbd" file invalid.

Invalid numeric format

Superbase application program error, or ".sbd" file invalid.

Invalid numeric parameter

Illegal value for a function.

Invalid parameter

Superbase application program error.

Invalid text parameter

Illegal value for a function.

Misplaced command

Operand missing in command line.

Name too long

Field or variable exceeds limit of 15 characters.

Next without for

Superbase application program error.

No external file field defined

You have clicked on the External File (camera) button when the current file has no External File fields in its definition.

No file name given

Superbase application program error.

No file selected

Superbase application program error.

No more images for this record

Image Next or Image Previous cannot work when you are already looking at the last or first image respectively for the current record.

No record selected

Superbase application program error.

No record with this key

Appears for your information whenever a key lookup doesn't find an exact key match, even if you used a partial key entry to retrieve the record.

Not an Index

Your attempt to open or remove an index failed because the index file does not exist.

Not an open file

File named in command line is not an open file.

Number too large

Superbase handles numbers up to 1.797693134862e308.

Number too long

Exceeds permitted format maximum of 13 digits.

Opening parenthesis missing

Error in formula or command line. There must be equal number of opening and closing parentheses.

Operator not allowed with text

Only certain operators may be used with text items.

Out of data

Superbase application program error.

Print command failed

Failure occurred during a printing operation.

Problem positioning in data file

Superbase system error. Restart. May have occurred as a result of a disk error.

Problem reading external file

Error within external file.

Remove index before deleting field

You cannot remove an indexed field from the File Definition until you have made it a non-indexed field by removing the index.

Return without gosub

Superbase application program error.

Statement has an unrelated section

An expression in a Command Line is not joined to another by AND or OR.

String too long

Superbase application program error. Maximum string length is 256.

SUPERBASE error deleting key: 100/101/102/103

Superbase system error in Index. Remove and rebuild index.

SUPERBASE error reading block: 200/201

Superbase system error in data file. Export data and import into a new file.

Syntax

Superbase application program error, or error in Process Update command line.

This field must have some data

This field is a required field. You may enter zero to a required numeric field, but you can't press Return for any type of required field.

Undefined error

Internal Superbase system error. Please notify software supplier.

APPENDIX A

Error Messages

Undefined program label

Superbase application program error.

Variable not defined

Superbase application program error.

THE LIKE OPERATOR

LIKE is the operator you should use when searching for text strings in fields. This means that you will use it very frequently in Superbase's Filter Command Lines to define and select the records you want to view or process. LIKE allows you to use *pattern matching characters* so you can define text strings with fixed patterns of characters whose content may vary, or text strings of indefinite length as well as content. You can also use square brackets to define specific *ranges* of characters to be accepted by the Filter.

LIKE Syntax

LIKE "text" Field with content "text"

The asterisk represents a text string of any length:

LIKE "**"	finds all empty fields
LIKE "?*"	finds all fields that are not empty
LIKE "text*"	"Text" string at start of field
LIKE "**text"	"Text" string at end of field
LIKE "**text**"	"text" string anywhere in field

The question mark represents a single character:

LIKE "???"	Fixed length, any content
LIKE "?text?"	Fixed length, fixed content "text"
LIKE "?text*"	Fixed leading length/content, any length

A range inside square brackets may be used in place of a question mark character:

LIKE "[a-m]"	Single character range a through m
LIKE "[adg-j]*"	Character a, d, or g through j

The caret or up arrow at the start of a bracketed sequence signifies exclusion:

LIKE "[^n-w]"	Excludes characters n through w
---------------	---------------------------------

You can combine different elements of the pattern matching syntax:

LIKE "a??[c-h]?x**"

This matches "a" in the first position, any character in the second and third positions, the range from "c" to "h" in the fourth position, any character in the fifth position, "x" in the sixth position, and any number of characters following the "x".

EXAMPLES

Each of the examples uses the demonstration Addresses file.

Example 1

Suppose you want to find the records for the customers whose forename is "Robert". You would have to enter the following in the Filter Command Line box:

Forename LIKE "robert"

Notice that we don't trouble to enter an upper case "R", as the LIKE operator is case insensitive. You can try this out now if you wish. Once you have entered this Filter Command Line, click on OK. Superbase will then display all the records where the Forename field is LIKE "Robert"; in fact there is only one, which is record number DAL0001.

Example 2

Supposing that you don't know the full forename you're looking for, but you know that it starts with an "s". Again you can use the LIKE operator to help you. You would need to create the following Filter Command Line:

Forename LIKE "s*"

The "*" is important, because you are telling Superbase to find any record that starts with an "s" and can be followed by any number of characters. If you create this Filter Command Line and click on OK you'll find that Superbase will list four records, starting with Steve Fields' record.

Example 3

What if you don't know which letter the forename starts with, but you know that it contains an "r" somewhere in the spelling? To find the record this time you would have to use the following filter:

Forename LIKE **"*r*"**

Once you've entered this filter you should get 12 records, which each contain an "r" somewhere in the forename.

Example 4

Although this is a slight digression, it's useful to be able to NEGATE a LIKE expression. If you want to get all those forenames which don't contain an "r", you can change the previous Filter Command Line to read:

NOT (Forename LIKE **"*r*"**)

This will list the forenames which you didn't get in Example 3

Example 5

Taking our example a step further, supposing you want those records where the fourth character of Forename is an "r". In order to do this you would use the following Filter Command Line:

Forename LIKE **"???r*"**

Superbase will list three records from the Addresses file.

Example 6

Suppose you don't know any of the letters in the Forename, but you know it contains five characters. You could find the record with the following Filter Command Line:

Forename LIKE **"*****"**

This time Superbase will list those records whose Forename is five characters long. If you want to find those records

where the Forename is at least five characters long, you can type an "*" after the five question marks.

Example 7

LIKE also allows you to search for ranges of characters. Suppose you want to list just those records where the Forename begins with "a", "b", or any letter between "j" and "m". The Filter Command Line should read:

Forename LIKE "[abj-m]*"

Notice that whatever is inside the square brackets represents a single character. If you want to specify ranges for more than one character in a string, you must use a set of square brackets for each one.

FUNCTIONS

ABS(X) Returns the positive value of X.

ASC(X\$) Returns the ASCII decimal value of a single character, text literal or a string variable.

ATN(X) Returns the angle measured in radians, whose tangent is X.

CHR\$(X) Returns the text character of a numeric variable or number.

COS(X) Returns the Cosine value of X, where X is an angle in radians.

DATE\$(date field) Returns a text string from a Superbase date field or a julian date number.

DAY(date field) Returns the day of the month as a numeric value from a date field or a date string.

DAYS(date field) Returns the julian date number of a date field or date string.

DAY\$(date field) Returns the day of the week as a string variable.

EXP(X) Returns the mathematical constant e (2.71827183) raised to the power of X.

FIX(X,N) N sets the number of decimal places to which the numeric expression X (which may include field names) is stored or output.

INSTR(n,X\$,Y\$) Returns n as the starting character position of substring Y\$ within the string X\$, or 0 if the string is not found.

INT(X) Returns the integer value of a real number.

LCASE\$(X\$) Returns the lower case equivalent of a text string or field.

LEFT\$(X\$,n) Returns the leftmost n characters of a text string or field.

LEN(X\$) Returns the length of a text string or field.

LOG(X) Returns the natural log of a numeric field or number.

MID\$(X\$,m,n) Returns a substring of length n beginning at character position m from within a text string or field.

MONTH(date field) Returns a numeric value for the month of the year.

MONTH\$(date field) Returns the month of the year as a text variable or field.

RIGHT\$(X\$,n) Returns the rightmost n character of a text string or field.

RND(X) Returns a randomly generated number between 0 and 1. If X is 0 the number is the same as the previous one. If X is less than zero, the function is reseeded. If X is greater than zero, a new number is generated.

SGN(X) Returns a value depending on the value of X: -1 for negative or equal to zero, 1 for positive.

SIN(X) Returns the Sin of X where X is a value in radians.

SQR(X) Returns the square root of X.

STR\$(X) Returns the text string equivalent of a number or numeric field.

TAN(X) Returns the Tangent of X where X is a value in radians.

UCASE\$(X\$) Returns the upper case equivalent of a text string or field.

VAL(X\$) Returns the numeric equivalent of a text string or field.

YEAR(date field) Returns a numeric value for the year.

RESERVED WORDS

+	CLOSE	HEADING	PI
-	CLS	HOME	PREVIOUS
*	COUNT	IF	PRINT
/	CREATE	IMPORT	PROCESS
<>	CURRENT	INDEX	PROTECT
=	DATA	INPUT	QUIT
>=	DATABASE	IT	READ
>	DEBUG	JOIN	RECALL
<=	DELETE	KEY	REM
<	DESCENDING	KILL	REMOVE
>	DEVICE	LAST	RENAME
?	DIRECTORY	LIKE	REPLACE
ADD	DISPLAY	LET	REPORT
AFTER	DOWN	LIST	RESTORE
ALL	DUPLICATE	LOAD	RESUME
AND	EDIT	LOCATE	RETURN
APPEND	EJECT	MAKE	RUN
AS	ELSE	MATCH	SAVE
ASCENDING	END	MEAN	SCRDUMP
ASK	ENDREPORT	MEMORY	SUM
ATR	ENTER	MODIFY	SUMMARIZE
BEFORE	ERASE	NEW	TO
BELL	ERROR	NEWLINE	TODAY
BF	EXECUTE	NEXT	TOTAL
BG	FOR	NOT	UL
BLANK	FORMAT	NUMBASE	VIEW
BREAK	FROM	OFF	WAIT
BY	GET	ON	WHERE
CHAIN	GOSUB	OR	WHILE
CHANGE	GOTO	ORDER	
CLEAR	GROUP	OUTPUT	

ASCII Values

ASCII	DECIMAL	ASCII	DECIMAL	ASCII	DECIMAL
NUL	0	+	43	V	86
SOH	1	,	44	W	87
STX	2	-	45	X	88
ETX	3	.	46	Y	89
EOT	4	/	47	Z	90
ENQ	5	0	48	[	91
ACK	6	1	49	BACKSLASH	92
BEL	7	2	50	]	93
BS	8	3	51	^	94
HT	9	4	52	-	95
LF	10	5	53	ACCENT	96
VT	11	6	54	a	97
FF	12	7	55	b	98
CR	13	8	56	c	99
SO	14	9	57	d	100
SI	15	:	58	e	101
DLE	16	;	59	f	102
DC1	17	<	60	g	103
DC2	18	=	61	h	104
DC3	19	>	62	i	105
DC4	20	?	63	j	106
NAK	21	@	64	k	107
SYM	22	A	65	l	108
ETB	23	B	66	m	109
CAN	24	C	67	n	110
EM	25	D	68	o	111
SUB	26	E	69	p	112
ESC	27	F	70	q	113
PS	28	G	71	r	114
GS	29	H	72	s	115
RS	30	I	73	t	116
US	31	J	74	u	117
SP	32	K	75	v	118
!	33	L	76	w	119
"	34	M	77	x	120
*	35	N	78	y	121
\$	36	O	79	z	122
%	37	P	80	{	123
&	38	Q	81		124
'	39	R	82	}	125
(	40	S	83	~	126
)	41	T	84	DEL	127
*	42	U	85		

SUPERBASE PROFESSIONAL

Superbase Personal is suitable for almost all database applications. However, Precision Software recognizes that many users want a system that can be customized to their exact requirements. Superbase Professional is a more advanced version of Superbase, with enhancements in many areas, plus three major new features:

- * **Application Builder.** A forms editor allows you to design and draw business forms and reports on screen. Each form can update or report on multiple files, so you can create sophisticated applications modelled on the documents you already use. Your reports can be extensively formatted to increase their information content and legibility.
- * **Programming Language.** A full program editor enables you to write application programs using our simplified BASIC, which has many commands designed specifically to make life with a database easier. This language is an improved and redesigned version of the original Superbase Programming Language which has well over 100,000 users. The language is a modern version of BASIC, with new control structures, procedure labels and optional line numbers.
- * **Word Processing.** The integrated word processor is as easy to use as the database itself. You can generate a mass mailing from a database address file as easily as you can write an individual letter. Memos, reports, lists, and all the standard word processed documents can be created simply and straightforwardly. However, the word processor is intended for normal office and business use. It is not a Desktop Publishing system, so you won't have to learn about any complicated formatting features that most people don't need.

Registered users of Superbase Personal will be able to obtain Superbase Professional at a reduced price.

For details of the availability of Superbase Professional, please contact Precision Software Limited, or Precision Software's main distributor in your country.

TUNING FOR OPTIMUM PERFORMANCE

To obtain the best performance from Superbase, follow these guidelines:

- * Use Kickstart and Workbench Versions 1.2 rather than 1.1.
- * Don't create unnecessary indexes.
- * Don't index fields that contain large numbers of duplicate entries, or have a small range of possible entries, such as "M" and "F" for gender.
- * If you work with a large file and you need to delete many records, reorganize using the following procedure:
 1. Remove all indexes but one.
 2. Use Process Remove to delete the required records.
 3. Rebuild the other indexes.
 4. Use System Reorganize to create a compressed file.
- * If you consistently use one index with a file, you can improve performance with this procedure:
 1. Make a backup of your data.
 2. Export all the data into a sequential file.
 3. Execute Process Remove to empty the database file.
 4. Import the data back into the file.
- * If you do not need to retrieve records in indexed order, use Process Query without specifying any Order fields; this is the quickest way of reading a file.

Fast selection of files

Throughout Superbase any operation you wish to perform with a file is initiated via a requester. You can speed up the selection process by double-clicking on the filename instead of selecting the file and then clicking on OK. This is only valid for the following requesters:

Open File	Save Query
Open Index	Remove File
Open Query	Remove Index
Close File	List File
New Index	

Record Save

If you select to save a record using either Save from the Record Menu or using the key combination *Amiga-S*, Superbase will no longer display the confirmation requester. This means that data entry will be faster as you will no longer have to use the mouse to respond to the Save Record confirmation requester.

Printing

Chr\$ (12) is now recognized by Superbase as ejecting a New Page on the printer.

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mpbase

The image features the word "mpbase" in a bright yellow, cursive script. A thick yellow diagonal line runs from the bottom left towards the middle right, passing under the text. The right edge of the image shows a series of white circular punch holes along the margin.